Self-directed learning: Status of final year students and perceptions of faculty leadership in a Nigerian medical school – a mixed analysis study.

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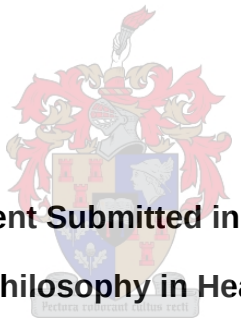

A Research Assignment Submitted in Partial Fulfilment for the Degree of Master of Philosophy in Health Sciences Education, University of Stellenbosch

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DECLARATION

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List of abbreviations

SDL – Self-directed learning

COHUU – College of Health Sciences University of Uyo

MDCN – Medical and Dental Council of Nigeria

COMUI – College of Medicine, University of Ibadan

SRSSDL – Self-rating scale for self-directed learning

SRL – Self-regulated learning

PBL – Problem-based learning

CanMEDS – a Physician competency framework developed by the Royal College of Physicians and Surgeons of Canada

Definitions

The following words used in this report are defined to provide an easier grasp of its context:

Perception

"A particular way of understanding or thinking about something". (Macmillan English Dictionary, 2002)

Provost (University of Uyo perception)

The chief executive officer of the college of health sciences

Faculty

The members of both the basic and clinical faculty leadership, who participated in the focus group discussion.

ABSTRACT

Introduction

Self-directed learning (SDL) is the essential mechanism of lifelong learning which, in turn, is required for medical professionals to maintain competency due to advancing technology and constantly evolving disease care and contexts. Yet, Nigerian medical schools do not actively strive to develop self-directed learning skills in medical students, neither is it implemented in the College of Health Sciences, University of Uyo (COHUU).

Aim of study

The aim of this study was to evaluate the status of self-directed learning behaviour amongst final year students, and the perceptions of faculty leadership towards SDL in a Nigerian medical school.

Methodology

A mixed method research method was used for the study. A survey design, in which students completed a self-rating scale for self-directed learning as a means of quantitatively assessing their self-directed learning behaviour, was employed. A focus group discussion involving selected faculty leaders provided the qualitative data for this study.

Results

The medical students displayed moderate self-directed learning behaviour, based on the score on the Self-rating Scale for Self-Directed Learning (SRSSDL). Thematic analysis of the qualitative data revealed that the faculty leadership perceived SDL as essentially self-motivated learning by students in a task-sharing partnership with and guided by, their teachers. Faculty expressed concerns over a possible misunderstanding of what SDL implies for students. They furthermore considered their students' SDL behaviour to be low. Faculty was willing to implement a COHUU model for achieving SDL.

Conclusion

This study suggests the baseline SDL behaviour of medical students at University of Uyo to be low to moderate, based on both the perceptions of Faculty leadership and the SRSSDL. Faculty are willing to implement a COHUU model for achieving SDL.

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Dedication

This work is dedicated to my living angel, a physiotherapist, my wife, Bola who is my woman for all seasons and to my children, David, James, John-Vidal and Sarah-Blossom, who endured so much loss of time with Daddy during the course of this programme.

I also dedicate this work to the staff and students of College of Health Sciences, University of Uyo, who are making great strides in expounding excellence despite difficult times.

Above all, I dedicate this work to my Lord Jesus Christ, who is Lord of all and Lord of love.

Acknowledgements

I humbly acknowledge the great achievements of the Department of Health Professional education, Faculty of Medical and Health Sciences, University of Stellenbosch, who have brought first world education into sub-Saharan Africa.

My supervisor Dr Alwyn Louw is a wonderful mentor, who has guided me through new terrain in reaching some measure of ‘learning to learn’.

The Provost, College of Health Sciences, University of Uyo, Prof. Memphin D. Ekpo, is a trail breaker who has shown great adaptability towards tools of academic excellence.

My father, Prof Vidal Nottidge always insisted that nothing succeeds like success and my late mother, Chief Mrs Doris Edem Nottidge caused us to soar and not falter.

I also wish to acknowledge two anonymous reviewers for refining the output from this effort.

1. Introduction

1.1 Introduction

Self-directed learning **(SDL)** is a concept by which life-long learning could be actualised (Murad & Varkey, 2008a). The life-long learning oriented medical doctor, who is self-directed, has the capacity to maintain competency for the duration of the doctor's professional life. This skill enables the doctor to maintain standards of safe, efficient and relevant care, despite the rapid changes in the practice and contexts of medicine and evolving technologies, which could render the doctor's skills at graduation rapidly obsolete (Frank & Snell, 2014; Towle & Cottrell, 1996).

Life-long learning also features in the in two major roles mentioned in the CanMEDS framework – medical expert and scholar (Frank, Snell 2014). In addition, the Medical Schools Objectives Project of the American Academy of Medical Colleges included life-long learning as a necessary component of the attribute that requires physicians to be knowledgeable throughout their professional lives (Learning objectives for medical student education--guidelines for medical schools: report I of the Medical School Objectives Project, 1999). Grow (1991:127) stated - "the goal of the educational process is to produce self-directed, life-long learners". These skills can only be acquired in an adult education learning environment (Knowles, 1975).

1.2 Problem statement and research question

In Nigeria, the Medical and Dental Council of Nigeria (MDCN) is responsible for the regulation of medical education. The guiding document for medical education is named the 'Red Book' and contains the general and specific objectives thereof, neither of which makes mention of the concepts of life-long learning or SDL (Registrar, 2006). Historically, SDL was not emphasized in medical education in Nigeria until recently (in 2010), when the College of Medicine, University of Ibadan, - Nigeria's first medical school - upgraded their curriculum to embrace modern concepts (Olapade-Olaopa, 2010). Knowles (1975) found that knowledge gained at graduation becomes obsolete within 10 years, which suggests that self-directed, life-long learning is imperative for the Nigerian medical graduate who is permitted to practice independently for life after one year of graduation so as to prevent incompetent or inadequate medical care. The situation in Nigeria is made more desperate by the low doctor / population ratio of 0.4/1000 in 2010 (The World Bank 2014b). By comparison, the 2012 figures for South Africa are 0.8/1000 and that for United Kingdom is 2.8/1000. These statistics therefore further emphasise the need for the Nigerian medical doctor to become a life-long learner in order to stay current in delivering basic medical care to the 173.6 million Nigerians (The World Bank 2014a).

Unfortunately, the medical education landscape in Nigeria has yet to put the SDL concept to use; most medical schools are still using traditional subject-based curricula (Ibrahim, 2007). Although The College of Health Sciences, University of Uyo (COHUU) was one of the first universities in Nigeria to include SDL in its medical education curriculum (Appendix I), it still needs to fully realise this concept in its learning platform.

The curriculum at COHUU consists of two rather disconnected sections. The first section outlines the aims and objectives, and features many items that form part of modern-day higher education (Appendix I). The second section consists mainly of the curriculum-in-use (Appendix II), and is a traditional non-integrated, subject-based curriculum which corresponds to the concepts listed in the right hand column of the SPICES spectrum of Harden (1984), namely teacher-centred, information gathering, discipline based, hospital based, uniformed and apprenticeship. This disconnect between the two sections probably reflects the difficulty curriculum designers at COHUU have experienced in translating theory into practice at the time. The need to align the two sections of the curriculum prompted the researcher to conduct this study.

This study is based on the question – what is the current state of SDL among the students (as trainees) and its perception amongst the Faculty leadership (as trainers) at COHUU?

1.3 Aim

The aim of this study was to determine the status of SDL behaviour of final year students and the perceptions of the Faculty leadership towards self-directed learning in a Nigerian medical school, the college of health sciences, University of Uyo.

1.4 Objectives

The objectives of this study were to:

- determine the status of SDL among the final year students at COHUU.
- investigate the perceptions of SDL amongst the Faculty leadership at COHUU.
- obtain the perception of the Faculty leadership at COHUU about moving towards operating a curriculum that produces SDL in the students.

1.5 Delineations and limitations

This study was delineated to involve the following groups:

- final year students at COHUU at the time of the study.

- members of both the basic science and Clinical Faculty of COHUU who were invited to participate in the study.

The study was conducted between the months of April and July, 2014.

The study was limited by the capacity of Faculty who were themselves new to SDL, to give a structured impression about the SDL behaviour of their students. A gold-standard definition of SDL will be highlighted next.

1.6 Significance of the study

This study is the first objective assessment of SDL status and perception in a Nigerian medical school. It provides a baseline for the concept of self-directed, life-long learning in Nigerian medical schools.
The findings of this study may be transferable to other medical schools in Nigeria and West Africa, which are yet to define self-directed learning as a goal for medical education.

1.7 Ethical approval

Ethical approval for this study, titled “Self-directed learning – status of final year students and perceptions of Faculty in a Nigerian medical school, a mixed analysis study”, was given by the ethics committee of the Faculty of Medical and Health Sciences, University of Stellenbosch vide approval number S14/02/033.

Permission to carry out this study as part of college development and curriculum review was obtained from the Provost, College of Health Sciences, University of Uyo.

Written informed consent was obtained from the participants and they were assured of anonymity, except in the case of the pictures / video recording taken of the focus group which was done with permission. The questionnaire given to the students did not require any personal identification data (Appendix III).

The participants were informed that the college had the intention to utilise the data from this study to srt help in setting up a learning and assessment system aimed at developing SDL, and were assured of anonymity.

1.8 Brief overview of the mini-thesis

The introductory chapter provides the introduction to this study, emphasising the importance of SDL in acquiring life-long learning skills. It also highlights the aim of evaluating the SDL behaviour of final year students at COHUU, the students' SRSSDL score and the perceptions of Faculty about SDL. The work has been delineated, SDL was defined and the significance of the study proposed.

The literature review covers what is already known on SDL, highlighting areas which are relevant to this study. The applications of SDL with respect to traditional hierarchical cultures that occurs in Nigeria, are discussed.

The results section highlights the findings from both the quantitative and qualitative analyses of all data obtained from the students (by means of the SRSSDL) and Faculty (focus group), respectively.

In the discussion, the main findings are highlighted in relation to the literature. Limitations of this work are noted and conclusions are drawn from the findings.

Recommendations are put forward regarding ways in which the findings of this study may guide further research and provide a fulcrum for facullty development.

Box 1: Definition of Self-directed learning

SDL is probably best described by the following definition: "a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies and evaluating learning outcomes" (Knowles, 1975:18).

2. Literature Review on Self-Directed Learning (SDL)

Malcolm Knowles is generally acknowledged as the 'father' of andragogy or adult education and SDL. He emphasized the importance of self-directed, life-long learning by noting that the shelf-life of the subject knowledge and skills gained in higher education is at the most ten years and therefore, developing 'skills of enquiry' must be the objective of all education (Knowles, 1975). The guidelines for medical education in Canada and the USA emphasise the importance of developing skills in SDL on account of the need for physicians to engage in lifelong learning (Frank & Snell, 2014; Learning objectives for medical student education--guidelines for medical schools: report I of the Medical School Objectives Project, 1999). It would be useful to review the situation of PBL (the usual formal means of inducing SDL among medical students) in the developing world.

Developing countries - being characteristically resource-constrained - are likely to have difficulty implementing PBL due to its demand for well-trained staff and sufficient available funding. In Brazil, where PBL has been attempted at one University, the constraints (finances, space and reaction to change) to implementing it have been significant (Carrera, Tellez & D'Ottavio, 2003). A review of medical schools in South-East Asia reveals that only half the schools reviewed have PBL in their curriculum and most of these have between 20-40% PBL content in a hybrid curriculum (Amin *et al*. 2005). In sub-Saharan Africa, PBL efforts have been developed for the past two decades (mainly in South Africa) and have faced major problems with staffing, high start-up costs and lack of previous experience in adult education (Greysen *et al*. 2011). The West African sub-region has major infrastructure and funding problems and a lack of medical managers with adequate educational background (Gukas, 2007) and as such, has found the implementation of PBL to be largely impractical. The effort by the Anatomy department of the College of Medicine, University of Lagos in Nigeria, to implement a course-specific version of PBL is commendable, although its effectiveness still needs to be evaluated (Olabiyi *et al*. 2008). In East Africa, the Medical School at Makerere University has pioneered the phasing in of a PBL curriculum which spans the entire training programme (Kiguli-Malwadde *et al*. 2006).

This literature review will provide an overview of the current literature on SDL. It will explore some definitions of SDL, review self-regulated learning **(**SRL**)**, consider the cognitive load theory, dwell on motivation, metacognition, self-awareness and self-management issues, and explore tools for the assessment of SDL. The limitations of SDL and how this approach may be applied in PBL will then be highlighted before finally explicating the educational theories relevant to this research.

2.1 Definitions of Self-Directed Learning

As stated in the previous section (see Box 1), SDL as defined by Knowles (1975:18) is “a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies and evaluating learning outcomes”. This definition was applied by Knowles (1975) in a classroom setting, in which the learners were trained to define learning goals together, determine how to use available resources for learning, lay down how they would study to achieve those goals, actually carry out the plan and then assess how much learning has occurred. In addition, he made his students partners in deciding what should be covered in the examination. His role in all these was that of facilitator of the learning process with the aim of ensuring that learning - as opposed to merely the passive transfer of knowledge - had occurred. This gold standard approach to developing self-directed learners has been applied in medical education by the problem-based learning (PBL) method (Taylor & Miflin, 2008). The application of SDL within the ambit of PBL is somewhat different from Knowles’ views and reflects the observation by Grow (1991) that the full expression of SDL is not feasible in institutional learning. Rather, it is more aligned to Schmidt’s definition (2000:243), which is “the preparedness of a student to engage in learning activities defined by himself rather than by a teacher”. He emphasizes that the term ‘preparedness’ in this definition relates to both intrinsic motivation and the capacity to seek out and use relevant sources of information. Intrinsic motivation as it relates to this study will be further discussed in paragraph 2.4.

Whilst the definition by Knowles provides the mechanism by which an individual may carry out life-long learning activities *after* graduating from higher education, Schmidt’s definition is more customized to the period of studentship *during* the process of higher education. Barrows (1980 in Taylor & Miflin, 2008) and his team developed the PBL programme at McMaster University Medical School in the 1960’s as a means of applying SDL in medical education. The original concept is not merely a teaching method but an approach to learning (cf 2.11). Other institutionally related applications of SDL include distance learning and e-learning. Apart from medical training programmes, SDL has also been successfully applied across other disciplines.

Self-directed learners are defined by Abdullah (2001), as “responsible owners and managers of their own learning process”, and he emphasises that in order to grow as a self-directed learner, the student needs to take ownership of the learning process and the responsibility of managing it. This further buttresses the student-centred concept of self-directed and adult learning (Reed *et al*. 2014). The idea of self-management will be further discussed in paragraph 2.8.

Spanning four years, a retrospective study by Ainoda, Onishi & Yasuda (2005) revealed that only 5% of articles retrieved on MEDLINE with the key words 'self-directed learning' showed definitions of the concept. This finding further suggests that SDL remains an elusive concept, and some authors have ascribed the difficulty in defining it to the fact that SDL is considered to be both a goal of higher education and a learning pedagogy (Ainoda et al (2005).

One of the areas of difficulty with implementing SDL is in how much teacher support to provide the student. Grow (1991), in his four-stage model of developing a self-directed learner, posited that there needs to be a match between the amount of direction the student needs and that which the teacher provides. There is some criticism of Grow's model, to the effect that a mismatch can help challenge the student usefully towards more self-directedness (Tennant, 1992), a notion which correlates well with the theory of constructive friction (Vermunt & Verloop, 1999). However, within medical education the idea that less teaching support is universally appropriate, has led to frustration on the part of many students who need more teaching support to enable a foundational scaffold of knowledge, especially as they engage in new areas of learning (Miflin, Campbell & Price, 2000). This lends support to Grow's position that teaching students to be self-directed is necessary, possible and should be carefully staged (Grow, 1991).

Miflin *et al*. (2000) noted while setting up a new problem-based curriculum, that the varying interpretations of SDL by both faculty and students made implementation of the programme more difficult. In addition, the meaning of SDL to medical educators has been found to differ based on the pedagogic stance from which one views the concept (Greveson & Spencer, 2005). The present study which seeks to assess the status of the perception of Faculty at COHUU about SDL, will provide essential information that will guide the means by which SDL can be developed in students. SDL is however related to self-regulated learning **(SRL).** Thus the next sub-section explores SRL, which is a well-defined concept, with concrete components and proven academic benefit.

2.2 Self-Regulated Learning (SRL)

SRL "describes the proactive, self-directive processes and self-beliefs, by which students become masters of their own learning" (Zimmerman, 2008:166). The major pivot for SRL is the student's "personal initiative, perseverance and adaptive skill that derives from advantageous motivational feelings and beliefs and metacognitive strategies" (Zimmerman, 2008:167). The three concrete concepts that form the tripod of SRL are – metacognition, motivation and cognition (Kistner *et al*. 2010; Zimmerman, 1989). SRL expresses a student's motivation to achieve defined academic goals and utilising specific strategies, which leverages on self-efficacy beliefs (Loyens, Magda & Rikers, 2008; Zimmerman, 1989). Self-efficacy is the

individual's perception of his or her own personal capability to execute actions which would attain the defined academic goals (Zimmerman, 1989; Pintrich, 1999). SRL is usually related to classroom tasks and involves the student appraising the task (its details), assessing personal attributes (own knowledge, constraints, interest, advantages), setting a goal and laying out the strategy to obtain the goal, implementing this strategy, monitoring (through reflection) and modifying actions to achieve the goal (Loyens, Magda & Rikers, 2008).

The assessment of a student's SRL approach using the Learning and Study Strategies Inventory (LASSI) and the Motivated Strategies for Learning Questionnaire (MSLQ) has been found to be objective and significantly related to course performance (Zimmerman, 2008). While students with consistently high scores have been found to use self-regulating strategies, those who are trained to utilise SRL methods have shown a definite and sustained improvement in their examination scores (Kistner *et al*. 2010). Students can be trained to use SRL either by the teacher's direct training or by setting up a learning and assessment environment that induces SRL strategies (Kistner *et al*. 2010). An example of such a framework is the CLIA model of De Corte *et al* (2004). This model includes the use of self-direction strategies in learning, which provides an area of similarity between SRL and SDL. The use of these SRL learning environments has resulted in improved academic performance and problem-solving capacity. PBL, for example, yields good problem-solving ability probably through the encouragement of SDL.

There is however a grave danger when pursuing approaches such as PBL that relies heavily on SDL, without scaffolding the teaching and learning process. This danger is best described through an exploration of cognitive load theory.

2.3 Cognitive load theory

There are many theories of learning and some of them overlap or relate with learning from different perspectives. One of these theories is the cognitive load theory (CLT), which was first described by John Sweller in 1988. The cognitive load theory explains the utilisation of different types of memory in learning. It further assumes that learning requires a cognitive load that matches the working memory of the learner. This concept is based on the theories of types of memory, learning and cognitive load. The three types of memory related to this theory are sensory, working and long-term memory (Atkinson & Shiffrin, 1968 in Young et al, 2014). The three types of cognitive load are intrinsic, extraneous and germane, while the two major learning processes are schemata construction and automation (Young *et al*. 2014). Information reaches the individual through the sensory memory, but does not reach awareness till it moves from sensory memory to working memory. The working memory organizes the data into chunks based on information already stored in the long-term memory, before it moves into long-term memory (Merriënboer & Sweller,

2005). The human system of memory has been found to be evolutionally efficient, adaptable and yet static – the maximum number of operable working memory units have remained at seven - yet human beings are able to handle the increasing overload of information available in society due to the capacity of the long-term memory to hold limitless schemata (Merriënboer & Sweller, 2005).

Engaging long term memory is essential for learning to have occurred and SDL strategies can do this by reducing extraneous load (items of information not essential to learning the subject at hand) and fragmenting intrinsic load (essential items of information) (Young *et al*. 2014). For example, working from the problem in a biochemistry class can help the learner focus on those details of the subject that are clinically relevant and thereby reducing extraneous load.

However, when a novice encounters a combination of facts for the first time (for example, a trauma patient in shock who requires a splenectomy and also has a long bone fracture) the sensory information being received can easily overload the working memory and this could constitute cognitive overload (Young *et al.* 2014). Pure PBL applied at this stage could impair learning, without an expert scaffolding the information by simplifying it in such a way that the working memory can more readily organize the data into schemata. Indeed, it has been observed that when moving into new areas of learning, more teacher support is required (Miflin, Campbell & Price, 2000). Teacher support should be removed as expertise improves, allowing the student to learn on his/her own (Young *et al.* 2014).

The expert has the advantage of established cognitive schemata, which operate automatically and help in solving new problems through the use of rules by which these schemata apply those skills already learnt, to the new situation (van Merriënboer, Clark & de Croock, 2002). For the learner trying to construct new schemata, new data becomes better organized when it is connected to existing schemata or information mastered in the past (elaboration) (van Merriënboer, Clark & de Croock, 2002). This technique is one of the ways by which PBL methods are thought to enhance learning (Schmidt, Rotgans & Yew, 2011). In addition, the early demonstration of the relevance of basic sciences to clinical knowledge, as well as the excitement of discovering an answer to the problem, helps motivate the medical student's learning (Taylor & Miflin, 2008; Davis, 1999).

2.4 Motivation in Self-Directed Learning

Schmidt's (2001) definition of SDL, (cf 2.1), draws attention to the key role of motivation in providing a deliberate personal drive to learn. It is assumed in adult education that this motivation is intrinsic (Merriam & Caffarella, 1999 in Misch, 2002). However, Misch (2002) observes that human motivation is intrinsically complex and situational. Thus, he criticises the adult education concept as applied to

medical students with an assertion that they have both intrinsic and extrinsic motivations to learn and that the distinction between the two does not really matter. This rings true with the dogma that 'assessment drives learning' and also provides a foothold from which student motivation can be enhanced (Cilliers *et al*. 2010). After all, the advantage of considering motivation in student learning is to devise reliable means of increasing the student's motivation to learn.

SDL enhances learning motivation by drawing on peer pressure in group learning within PBL (Albanese, 2010). It also leverages on the excitement of solving a problem, which is supposedly more interesting to an adult learner, than the subject-based focus of younger learners (Misch, 2002; Schmidt, Rotgans & Yew, 2011). The small group framework of PBL makes it easier for the teacher to remember each student, and should reduce the tendency for students to disappear into the background and drop-out of the learning process (Schmidt, Rotgans & Yew, 2011). The concept of relevance encourages the student's interest in learning, by showcasing the relevance of basic subjects to clinical medicine.

Motivation within the context of education can be defined as "the willingness to exert effort toward educational goals, often despite difficulties and setbacks" (Madjar *et al*. 2012:2). Motivational theory encompasses the following:

1. *Goal orientation theory* can be considered as the goal set by the individual, to either derive fulfilment from having shown good academic effort (performance orientation) or to learn material in order to derive value from using the knowledge or skill effectively (mastery orientation) (Perrot *et al*. 2001). The student with a mastery orientation is more likely to engage SDL strategies and progress to life-long learning. Mastery orientation is positively related to using deep learning, long-term retention of information, generally adaptive behaviour and less distraction by the performance of others, and students with this kind of orientation are more likely to be realistic about their abilities (Madjar, Bachner & Kushnir, 2012). The third orientation in this approach, is performance-avoidance in which the student wishes not to be seen as incapable – such students tend to cover up their inadequacy (Madjar, Bachner & Kushnir, 2012), and as such are not likely to be effective self-directed learners.
2. *Metacognition*, thinking about one's own thinking processes, enables one to more accurately self-assess, determine areas of need, think about personal learning strategies and what methods work best in achieving learning (Shannon, 2008). Thus the student applying metacognitive strategies will more likely utilise the self-assessment key of SDL and be more forthcoming in acknowledging deficits, which is a trait of the mastery orientation. In addition,

metacognition is considered a core component of SRL .This concept will be further discussed later in this review.

3. The concept of *locus of control* feeds off meta-cognition, because the student with an internal locus of control (the belief that one can determine one's own course in life, including the mastery of knowledge or skill) is more likely to be meta-cognitive.
4. *Controlled motivation* speaks to an extrinsic basis for moving towards a goal, while autonomous motivation relates to pursuing items that are seen as interesting or important to the person. Autonomous motivation is in tandem with SDL, while controlled motivation relates more to an external locus of control and a performance orientation. However, learning medicine is a somewhat controlled process and thus students could easily yield to the controls in the system and pursue more performance-oriented and superficial learning. An SDL environment is designed to progressively deny students those controls, which results in them becoming self-directed learners who are autonomously motivated.

Developing motivation in students, involves learning environments that encourage the student to move from an extrinsic to an intrinsic motivation for learning (Knowles, 1975). Nevertheless, extrinsic motivation also helps drive the student's learning efforts in terms of depth and spread (Cilliers *et al*. 2010). Medical students have been found to be highly motivated to become doctors and thus SDL strategies can feed off and build upon that initial intrinsic motivation (Ten Cate, Kusurkar & Williams, 2011). The impact of motivation for learning to become a doctor is thought to possibly override the impact of different modes of teaching and learning and render the outcome of these different modes quite similar (Ten Cate, Kusurkar & Williams, 2011; Schmidt, Vermeulen & van der Molen, 2006). This occurs across countries and within different curricula (Albano *et al*. 1996). In summary, motivation is seen as the fulcrum for SDL, both intuitively (self-effort requires self-drive) and supported by research (Abdullah, 2001). Developing SDL relies heavily upon the enhancement and refinement of a persons' motivation. The pillars on which motivation rests are confidence, curiosity, cognition (meta), capability and culture (learning environment and a persons' sense of self-worth).

2.5 Metacognition and Self-Directed Learning

Metacognition is defined as "an appreciation of what one already knows, together with a correct apprehension of the learning task and what knowledge and skills it requires, combined with the ability to make correct inferences about how to apply one's strategic knowledge to a particular situation, and to do so efficiently and reliably" (Peirce in Shannon, 2008:18). The student can apply this concept in a learning situation by asking 'what do I know', 'what don't I know', and 'what do I need

to know' (Shannon, 2008). Learning to actively reflect during learning and knowing one's own learning styles can therefore facilitate the metacognitive process. A teacher can help the student's metacognition in several ways, including developing the student's skills in active reflection, encouraging the student to ask himself the self-awareness questions alluded to earlier in this paragraph, and training the student to self-assess and self-evaluate. These processes significantly facilitate self-directed learning, which rests on the pivot of self-assessment and therein lies one of the main criticisms against SDL – the validity or otherwise of self-assessment. This will be further discussed in paragraph 2.7.

A more in-depth exploration into learning styles is beyond the scope of this work, although it is acknowledged that a student's self-awareness is better served when the student is aware of his or her unique method of learning.

2.6 Self-awareness and Self-Directed Learning

To be self-aware is "understanding what your own true thoughts, feelings, and abilities are", as defined by the Macmillan English Dictionary (Rundell & Fox, 2007). Although there are emotional aspects to self-awareness, this review will focus more on the 'learning abilities' aspect of self-awareness, which individuals can either discover on their own over time, or be guided to discover at a much earlier stage. There are several tools for guiding learners to discover their learning strengths, weaknesses and styles and Curry has somewhat stratified these tools into three classes, from core cognitive through 'information processing' to superficial 'instructional preference' (Curry in Chapman & Calhoun, 2006). A study by Chapman and Calhoun (2006) found the learning personality and style suited to a PBL programme to be more abstract and active rather than concrete and passive. Their study did not however, explore the personal awareness of the student and therefore did not shed light on how self-awareness might affect the efficacy of learning or the development of independent learning. The personality of dealing in the abstract and tending to use more active than passive learning methods, speaks to the subliminal need of the self-directed learner, which is that of personal fulfilment and self-actualisation. This is an ethos captured in the theory of humanism, which will be discussed further in paragraph 2.12.

2.7 Self-assessment

Self-assessment is viewed as an aspect of self-awareness and implies that the student acknowledges areas of deficiency in the required knowledge, skills and attitudes. As Gordon (1991:768) put it "the ability to assess one's own learning needs is fundamental to self-directed life-long learning and to continued competence in the ever-evolving health professions". However, both Gordon's review (1991) and that of Colthart *et al.* (2008) yield a low rating of the reliability of self-assessment in

the health professions at both undergraduate and postgraduate levels. Both reviews also found a dearth of studies with sufficient academic rigour to conclude on those variables that affect self-assessment, although video feedback was found to enhance the reliability of this process. Both studies also alluded to the capacity of a deep learner to appreciate the need to deepen his or her understanding of a new subject and persevere in composite learning until reasonable facility is achieved. In addition, the question of how a learner appreciates having reasonable personal knowledge and skill without an external agency (or assessor), was not adequately addressed in the texts reviewed in this study. Self-assessment - although a key concept in SDL - appears not to be a trait among physicians or their students (Gordon, 1991; Colthart *et al*. 2008; Norman, 1999) (Davis *et al*. 2006).

Reliable self-assessment should be central to the concept of SDL, as it portrays a person who perceives a need to learn and pursues the set learning objective, having committed to it and evaluating along the way how much learning has been achieved. Self-assessment should occur twice in the SDL process: initially by becoming aware of the learning deficiency and subsequently by evaluating the level of competency achieved; the cycle is never ending. It becomes difficult to view the mechanism as a panacea to personal progress if self-assessment is weak. However, several authors have noted that the more efficient learners underestimate themselves, while the less knowledgeable tend to overestimate their capabilities (Colthart *et al*. 2008; Norman, 1999; Duffy & Holmboe, 2006).

The question that is yet to be answered in the literature reviewed in this study is to what extent the self-assessment practices developed in a SDL setting like PBL, translates into the doctors professional life, where the basis, means and explicit purpose of self-assessment are vastly different (to improve one's practice as opposed to improving one's grades).

2.8 Self-management and Self-Directed Learning

Self-management is the willingness as well as the ability of the learner to manage his or her own learning (Loyens, 2008) and constitutes the individual's goal setting as well as the strategies employed to achieve those goals, and although this definition strongly alludes to SDL, in literature, self-management is more readily viewed as a core concept of SRL rather than SDL (Loyens, Magda & Rikers, 2008). It is taken as a given that setting goals helps motivate and direct learning effort. However, with respect to learning, Woolard's (2008) Target Achievement Goal Theory places the individual's drive to perform in two categories:

1. *Task goal orientation*, "where the focus is on improving performance relative to past performance", and not on comparing performance to others. Students who fall in this category "have a stronger work ethic, are more

persistent, and are better motivated because the factors they focus on are internal and more controllable" (Woolard in Shannon, 2008:16). This is similar to the mastery orientation discussed in 2.4.

2. *Outcome goal orientation*, "…where they constantly compare themselves with others". Such factors are external and uncontrollable. Students in this category "tend to give up more easily, and select tasks that are easier to perform" (Woolard in Shannon, 2008:16). This is similar to performance orientation.

2.9 Assessment of Self-Directed Learning

As with any skill that is to be developed, there is a need to assess the extent to which the student has mastered that skill. There are various tools that have been developed for the assessment of SDL. These tools can be divided into generic (such as the Self-Directed Learning Readiness Scale) and profession specific (e.g. the Fisher Scale – nursing); potential (readiness) and kinetic (behavioural) and despite strong criticism found in literature on the validity of some of these established tools, many are widely used.

The most common tool appears to be Guglielmino's Self-Directed Learning Readiness Scale (SDLRS) (Premkumar *et al*. 2013). It was developed by Guglielmino in 1977, using a Delphi approach. The original scale had 41 items and it was later expanded to 58 items (Field, 1989). It has suffered major criticisms, one of the most prominent being that by Field (1989) and Bonham (1991).

Lawrence Field (1989) analysed the SDLRS in order to establish the basis for its eight-factor structure and the validity of the scale as a measure of self-directedness in learning. He found that the entire scale should be homogenous (not divided into eight groups), that negatively worded items were not useful and that the scale at best measured a love or enthusiasm for learning rather than self-directedness in learning. Despite other major criticisms of the SDLRS scale (Bonham, 1991), its use continues to the present (Premkumar *et al*. 2013). These criticisms as well as the fact that the purpose of this study was to measure present SDL behaviour and not its 'readiness' as a future intention, the SDLRS was considered to be unsuitable as a measuring instrument for this study.

Other scales used for measuring self-directed learning include Oddi's scale (Oddi, 1986), which focuses on continued learning and the Fisher scale, which was specifically developed for nursing education (Fisher, King & Tague, 2001). None of these two commonly used scales were appropriate for this study, which required a scale that measured SDL behaviour of medical students. The Self-Rating Scale for Self-Directed Learning (SRSSDL) by Williamson (2007) was designed to assess

SDL behaviour, where the user's level of self-directedness in learning is graded on an ordinal scale as being either low, medium or high. The initial validation of the SRRSDL scale and that of an Italian version, were on cohorts of nursing students (Cadorin *et al*. 2011). However, the SRSSDL scale is applicable to all health professions, having been developed using a Delphi technique that involved equal numbers of medical doctors and nurses. In support of this, a recent study utilised the SRSSDL to assess SDL behaviour in both nursing and radiology technician professionals and students (Cadorin *et al*. 2012). These facts, together with a critical review of the items on the scale rendered the SRSSDL an appropriate scale for gathering the data required for this study.

Due to the conative and intangible nature of SDL, it is a difficult trait to measure objectively. Therefore its measurement necessitates a mode of subjective enquiry and the data obtained from the enquiry should be interpreted with that understanding.

2.10 Limitations of Self-Directed Learning

Some of the limitations of SDL, especially as applied to medical students, have been alluded to earlier in this dissertation, but will be more deeply explored in this section, including some thoughts about the incongruity between SDL and traditional hierarchical cultures in Nigeria.

The medical learning milieu is necessarily structured; as the output must be predictable, and society needs to have a simple answer to the question – who or what is a medical doctor? Many medical regulatory bodies have tried to define what medical schools should aim for in providing a clear outline of the competencies the medical graduate should have (Frank & Snell, 2014; Learning objectives for medical student education--guidelines for medical schools: report I of the Medical School Objectives Project, 1999; Frank, 2005). However, the long tradition of SDL in medical education, often incubated in a problem-based learning environment, aims at producing self-directed life-long learners (Barrows & Mitchell, 1975; Schmidt, 1983). The question is: can this learning orientation really be developed in a structured learning system?

Spencer (1999) has observed that a traditional curriculum is not likely to produce self-directed learners. Furthermore, Koh *et al*. (2008) did an extensive review to determine the effects of PBL on physician competency and found only moderate self-assessed and observed evidence in support of self-directed or continuing learning. From a review of 269 articles, Schmidt (2001) contended that PBL curricula "encourages self-directed learning", and specifies self-study time and rate of book borrowing from the library, as some indices of SDL gleaned from the few empirical studies he came across. PBL however, is seen as the educational method and

philosophy most likely to develop SDL (Chang, 1995; Spencer & Jordan, 1999). Most medical schools implement a hybrid curriculum, combining PBL and traditional methods, for example utilizing small group learning centred on a problem, and didactic lectures (Spencer & Jordan, 1999). The amount of structure in a PBL based programme is less than that of a traditional one, in terms of purposefully increasing self-study time and having fewer encounters with the facilitator. Therefore, the overly structured traditional curriculum, being teacher-centred is ill-disposed to self-directed, life-long learning, but it is this structure - inherited from the former colonial masters - which exists in most Nigerian medical schools today (Ibrahim, 2007).

Self-directedness in problem-based curricula has been found to be limited (Schmidt, 2000). Rather, Schmidt (2000) has observed that several studies note the various means students use to direct their study: small group decisions on what to study (i.e. 'other' directed), hints from the facilitators, impressions on what will be examined, clues from older students based on content covered in their time, etc. Based on a meta-analysis of 59 studies, Murad and colleagues (2010) found that in the subgroup "learner involved in choosing learning resource", the result was more negative than positive in the domains of knowledge, skills and attitudes. Thus the actual self-determination of learning in SDL is at best moderate.

The clinical application of SDL is even more uncertain, as the demands of social accountability require from medical training institutions not only a clearly defined concept of a medical doctor and a specific and standardised set of generic skills necessary to qualify as a medical doctor, but also the assurance that these qualities and skills will maximally benefit society (Boelen & Woolard, 2011). The concept of an individual directing his or her own learning in this well-defined and outcome-directed environment has been a niggling problem for many years (Schmidt, 2000). Various institutions have attempted to transform their training philosophy to be more SDL oriented, but many attempts at generalising such training have failed, often due to the situation-specific applications of SDL (Taylor & Miflin, 2008). It would seem that clinical applications of SDL are customised to the context in which it is applied, with threads of the original idea held fast and the goal of developing life-long learning skills in the students serving as the guiding principle. As it is intuitive to consider that people operationalise concepts of learning based on their perspectives of learning, it is important to understand the perceptions of medical educators about SDL in order to ensure the concept is applied maximally (Mann, 2011; Ainoda, Onishi & Yasuda, 2005).

A further possible obstacle to the application of SDL is its framework within traditional cultures, such as that which prevails in Nigeria. As literary sources on this topic are virtually non-existent, the researcher has drawn on his own experience to try and contextualise some of the difficulties which may be encountered when

attempting to espouse cultural traditions with the tenets of SDL. One foundational tenet of SDL is the equality of facilitator and student, to such an extent that for example, they are on a first name basis and relate as co-learners in their interaction with each other, with the facilitator as only one of several resources the student might choose from (Knowles, 1975). This notion is in stark contrast to the Nigerian culture, which places a great premium on hierarchy and therefore teachers (which is the term that applies in Nigerian higher education) view themselves as being 'above' the student, with the 'power' to determine the mark allocated to students' efforts. This view is so imbedded in the culture that it is also the view held by the students themselves - it would be a slight on the system in the minds of both these groups for a teacher to share this 'power' or to address one's teacher by his or her first name (even at post-graduate level). This hierarchical, traditional culture which prevails in Nigeria is strictly adhered to, has been for many years ande is passed down by parents and peers and any deviation from the 'beaten path' is strongly discouraged. Within this environment, the development of a clear sense of 'self' becomes virtually impossible and could set some barriers to the successful implementation of SDL. As SDL as a philosophy and strategy is also an unfamiliar concept to the majority of educators in Nigeria, this study will hopefully provide a rare glimpse at the perceptions of educators yet to be introduced to the SDL concept and all it entails. With regards to students, some concerns about self-directed learning highlighted by Dornan *et al.* (2005) include uncertainty about covering the crucial aspects of the course that will be examined and the depth of knowledge of the subject matter. (Dornan *et al*. 2005). A frequently asked question is: How do you determine what needs to be known without being shown what knowledge is available? In advanced fields of study, it is likely that new areas of knowledge are equally new to most of the students in a particular group. This causes an initial anxiety among members of the group, especially when they are yet to develop self-directed learning skills (Lunyk-Child, Crooks & Ellis, 2001; Hewitt-Taylor, 2001). This leads to an initial dependence on the teacher for direction (Miflin, Campbell & Price, 2000) and requires a gradual transition to more SDL, rather than an abrupt 'abandonment' (Miflin, Campbell & Price, 2000; Grow, 1994). How then, can SDL be best applied in a PBL environment?

2.11 Self-Directed Learning applied in Problem-Based Learning

PBL is based on four principles of modern day education – constructive, self-directed, contextual and collaborative principles (Dolmans *et al*. 2005). The self-directed aspect of PBL stimulates the student into being a partner in the education process, as the design requires the student to play an active role in the planning, monitoring and evaluation of learning (Dolmans *et al*. 2005). Thus PBL has for the last half-century, proved to be the arena for applying SDL in medical education. It is interesting to note that Barrows who developed PBL at McMasters University

medical school in the 1960's, inculcated the principles of andragogy into the curriculum without a formal introduction to the concept – he and his team are considered to have discovered adult education de novo (Taylor & Miflin, 2008).

PBL draws on the various aspects of self-directed learning by addressing a problem relevant to the specific knowledge and / or skill being developed, in a small group, with a facilitator; and it is by nature a 'problem first' concept (Albanese, 2010). The problem is paper-based and requires the students to use SDL processes and read around the case, which in turn also stimulates their interest, is an active learning mode, draws on previous knowledge (elaboration) and shows the relevance of basic sciences to future clinical practice (Wood, 2003; Schmidt, Rotgans & Yew, 2011). Various authors have shown how this operates to encourage self-directed learning skills in the student and also lead them into more effective learning (Schmidt, Rotgans & Yew, 2011; Dolmans *et al*. 2005). It has been observed that the students in PBL curricula are initially uncomfortable with the SDL ethos of the programme and require more support, but in later years they are more self-directed in their learning and seek less support from others (Miflin, Campbell & Price, 2000; Lunyk-Child *et al*. 2001).

PBL is usually applied in the pre-clinical years of medical training, as a means of vertical integration of clinical with basic material, though more medical schools are gradually phasing it in to form part of the clinical years as well (Sulaiman & Hamdy, 2013). However, Schmidt (2000) contends that the impact of PBL on students' SDL after graduation is limited (Schmidt, 2000), on physician competency it occurs mainly in the social and cognitive domains (Koh *et al*. 2008) and that it requires more resources to deploy (Azer, 2011). There is also limited evidence that it is more effective than traditional curricula.

2.12 Selected macro-theories of education relevant to Self-Directed Learning

For any educational endeavour to succeed, it requires a thorough understanding of the theories that underpin its function. Several of these theories overlap but this review will undertake to explore each distinct theory of learning as it relates to SDL.

2.12.1 Adult education

The term andragogy was coined by Knowles to explain the phenomenon of adult education and distinguish it from pedagogy, which relates to the teaching of children (Collins, 2004). Though distinct phenomena initially, they are currently viewed as being different aspects of the same entity. The distinguishing factor between the two is the amount of control and experience which the learner can bring to bear on the learning process (Collins, 2004). Adults are mature and independent, responsible, goal-oriented and self-directed in their learning objectives, relating the things learned

to their life experiences and tend to pursue learning which provides an advantage to their life goals (Collins, 2004; Murad & Varkey, 2008b; Hartzell, 2007).

SDL is at the core of the adult learning theory and shifts the focus of learning from the teacher to the learner (Hartzell, 2007). Such learners are expected to be self-motivated, self-reflecting, self-assessing and thus self-directed, but not autonomous learners who isolate themselves from peers. Rather, their peers become part of the learning resource which this learner may opt for according to the specifics of the learning required. When the self-directed learner encounters a completely unknown field, the relationship with the facilitator can become transiently dependent, while the learner gets oriented to this new area (Grow, 1991). Due to the adult nature of the students who are involved in continuing professional education, these programmes have been said by Knowles to be based almost exclusively on the principles of adult education (Knowles, 1985). However, some critics of adult learning theory consider it to have evolved mainly from assumptions that have not been tested or proven (Mann, 2011). For example, the observation that self-assessment (a core component of SDL) is usually inaccurate, and that SDL itself is antithetical to the core idea of producing a medical doctor, brings into question the lattice on which adult education is built. Thus SDL in a medical school should be encouraged but its scope should be guided to ensure that the desired skills are developed.

2.12.2 Humanism

In this learning orientation, learning is self-directed due to an internal rather than external locus of control based on the need for self-actualisation and self-fulfilment (Torre *et al*. 2006). Learning, from this perspective, is self-initiated, self-directed and self-evaluated and the teacher's role is that of a facilitator of learning rather than a source of knowledge (Torre *et al*. 2006). This type of learner will tend to operate a mastery orientation and have more autonomous motivation in learning pursuits, which would not be delineated by institutional frameworks. Thus this person is likely to pursue lifelong learning as a means of self-actualisation. It remains to be seen whether individuals who fit this description can operate these principles even when schooled in a traditional setting such as in Nigeria. That is an area of research for another study. The perception of the need by Faculty at COHUU for skills in facilitation will be explored in this study. The concept of elaboration alluded to in paragraph 2.2 is a significant anchor in applying the next theory.

2.12.3 Constructivism

Critical reflection on previously acquired knowledge is the scaffold on which knowledge is developed within the individual in this orientation, which considers knowledge to accrue from a process of assigning significance to internal realities and not from passively receiving knowledge from an external source (Murad, Varkey

2008b; Torre *et al*. 2006). The role of the teacher is to induce critical reflection in the learner (Torre *et al*. 2006). In PBL curricula this theory is leveraged through the handle of elaboration, in which previous knowledge is activated as a fulcrum for deeper understanding and retention of new knowledge (Schmidt, Rotgans & Yew, 2011).

2.13 Summary of the Literature review

This literature review has shown that while SDL as applied in PBL is difficult to define and has variable outcomes, SRL is rather well defined with somewhat consistent outcomes. The cognitive load theory however suggests that complex skills should be developed by providing proper scaffolding along the way. A well-motivated student is likely to do well in any learning endeavour, and with the mastery orientation to learning the individual is more likely to go on to life-long learning. Teaching the student how to critically reflect on the learning process, helps the student learn more efficiently. This is enhanced by the student's self-awareness and helps the student self-assess his or her own learning needs. With the skill of self-management the student manages his or her own learning process – this is usually discussed more under SRL. While there are many tools to assess SDL, the tool developed by Williamson is relevant to health professionals, focuses on SDL behaviour and is validated. The traditional format of medical instruction which occurs in most Nigerian medical schools is teacher-centred and inimical to developing SDL. The level of self-directedness in a PBL curriculum is limited and such a curriculum produces only a moderate level of self-directed learning behaviour among its graduates. A PBL curriculum attempts to develop a student's SDL capacity by starting from a problem to achieve learning, underpinned by some theories of education such as adult education, humanism and constructivism. The next chapter will elaborate on the methods employed in this study.

3. Methods

3.1 Introduction

This study was designed to assess the SDL behaviour of the final year students at COHUU, in order to obtain an impression of the overall level of SDL, albeit unintentional, within the COHUU setting. It was assumed that the final year students would be likely to possess more of the characteristics that the educational environment at COHUU actually provides. The study was also intended to determine the perception of the Faculty at COHUU about SDL and the SDL behaviour of the students, and to obtain their overall intent with respect to activating the SDL objective of the written curriculum.

This study is intended to open up a new area in the medical education landscape in Nigeria, by providing data on the status of SDL in a medical school, as a baseline for further study.

The study provides information about various aspects of SDL behaviour in the students, using a questionnaire developed by Williamson (2007). Her tool has both quantitative and qualitative segments. Data was also provided from the partially open-ended focus group discussion, which had open sections and structured interview segments. The transcript of the focus group discussion was analysed and coded, categorised into themes and concepts and developed into assertions. The structured aspect of the interview generated categorical data which provided further information relevant to the aims and objectives of this study.

The next sections detail the research design and setting, and provide details about the methods used in carrying out this research. The methods used in data analysis are highlighted and some limitations are mentioned.

3.2 Research design

This study followed a survey-based research design. It was carried out following a mixed method approach i.e. both quantitative and qualitative methods to gather multiple data in sequential fashion. The results of the quantitative data formed part of the substrata for the qualitative aspect of the study. The subsequent step of reviewing the findings with members of the focus group formed a third part of the study. This methodological (between-methods) triangulation intertwined all aspects of the work more closely together and as such yielded results which were deeper, more valid and more relevant, relative to the whole (Hewitt-Taylor, 2001; Johnson, Onwuegbuzie & Turner, 2007).

The quantitative part of the study utilised a questionnaire which required that the students choose the most correct option from a list of options on a Likert scale. The

qualitative part comprised a focus group discussion in which the researcher took a passive moderating role. The focus group discussion method is an efficient and cost-effective means of obtaining data on feelings and ideas, in which the group members provide mutual support and concept anchors upon which other members can build, to express the depth of their thoughts on a focused issue, in a non-threatening setting (Lunyk-Child *et al*. 2001; Onwuegbuzie *et al*. 2009).

3.3 Methodology

3.3.1 Introduction

This segment of the discourse will portray the setting of the study, selection of study population, research instruments, data collection, data analysis and limitations/ constraints encountered.

3.3.2 Setting

The quantitative part of the study took place in one of the classrooms of COHUU, at a time when there wasn't much disturbance from other students, to ensure some privacy and to curb distractions. The completion of a questionnaire was a first for the participant students and as such, they required a detailed explanation of its process and purpose. The researcher established rapport by first facilitating a discussion on items relevant to their impending examinations, before bringing up the study. The participants were then handed the questionnaire, which they completed in 10 minutes.

The qualitative leg of the study took place in the Provost's meeting room. The Provost gave a few brief remarks and took no further part in the proceedings. This was the first focus group discussion to take place at COHUU and there was an air of excitement. Only one participant arrived a few minutes after the event commenced. The entire discussion was audio and video taped, with the consent of the members. (see Appendix V).

3.3.3 Selection of the study population

Selection of the two study populations (students and Faculty) was done with the intent of including participants who were most likely to represent their respective groups with respect to the aims of the study (Daly & Lumley, 2002). For the students, this meant including the final year students who represent the most advanced output of those qualities intended by the curriculum-in-use. In this case, they would normally be expected to have the most evolved level of any self-directedness in learning that the medical school had unintentionally produced.

The members chosen from the Faculty were selected with the intent of obtaining a study population who have been at the helm of affairs in implementing the

curriculum and assessing the students. The group included the two deans and the heads of department. It was considered redundant to broaden the study population to include members of Faculty outside this apex group as the number of participants (nine), was within the recommended range for a focus group discussion, which is from six to 12 (Onwuegbuzie *et al*. 2009).

3.3.4 Research Instruments and Data Collection

This study was carried out in three phases, using a development mixed research purpose framework. Phase I (quantitative) consisted of administering the Self-Rating Scale for Self-directed Learning (Appendix III) to the medical final year students of COHUU, while Phase II (qualitative) consisted of the focus group discussion. Phase III constituted the member checking phase in which the findings from Phase II were discussed with members of the group to obtain their feedback. These discussions took place at a time and place convenient to each member as it proved impractical to gather the members of the focus group together for a second discussion. It was hoped that this methodological triangulation would help to reduce bias and to improve the credibility of the results (Lunyk-Child *et al*. 2001).

A pilot study was carried out with three students from a class below the Phase I participants, using the SRSSDL scale, to explore aspects of comprehension. This revealed two questions that the students did not understand because they included terms with which they were not familiar namely ‘concept mapping’ (items 2.10 and 3.3) and ‘portfolio’ (item 4.9). Despite this, the participants answered all the questions, and it was decided to allow students to proceed with the questionnaire as they understood it to avoid excessive modification of the contents and thereby invalidating the results.

Phase I consisted of administering the SRSSDL scale developed by Williamson (2007) to the final year students of COHUU in the setting described in paragraph 3.3.2. The SRSSDL consists of 60 questions within 5 domains, and has an additional “any other” question section, rendering the questionnaire partially open-ended (see Appendix III). Each question in the closed section was answered on a 5 point Likert scale. The resulting data was captured on a Microsoft Excel© spreadsheet, from which summative data was obtained. All the questions were positively worded.

All final year medical students of COHUU at the time of this study were targeted for inclusion in Phase 1. All participants were assured that they were permitted to withdraw from the study at any time without penalty.

Phase II consisted of a focus group discussion with participants comprising members of Faculty. The discussion method was chosen rather than that of a structured interview, as it gives more depth to the ideas expressed by the group

members and allows non-verbal expressions to weigh on the verbal data (Hewitt-Taylor 2001). The focus group consisted of nine people – seven heads of departments and the two deans in the college. The discussion was semi-structured, having some subjects for open discussion and some for categorical 'yes' or 'no' opinions. The detail of items for discussion and opinion are shown in Appendix VI. The quantitative data which was obtained by administering the SRSSDL to the final year students was presented to the focus group as part of the items for open discussion. The discussion on each point was concluded when saturation was reached – when there were no new ideas being expressed (Lunyk-Child *et al*. 2001).

3.3.5 Data management

The questionnaires completed during the 1st phase were collected and scored. The scores were captured on a Microsoft Excel© spreadsheet for analysis. During the 2nd phase, the focus group discussion was recorded on both audio and video devices and a manual transcript of the entire audio recording was made. The video recording was used to further elute the frame of the discussion at points where more depth of analysis was needed. The feedback obtained in phase III was worked into and enriched the data analysed in the 2nd phase.

3.3.6 Data analysis

Non-crossover mixed analysis was used to analyse the data. The quantitative data was captured on an Excel© spreadsheet and basic descriptive statistical data of the students' ages and scores were obtained – frequency and mean respectively (Appendix IV). The overall mean score was used to classify the group into low, medium or high self-directed learning behaviour, using the scoring rubric embedded in the SRSSDL.

The focus group discussion data was transcribed verbatim and coded manually (Appendix VII). The codes were grouped and collapsed into categories, from which themes and assertions were derived. The data analysis was discussed with members of the focus group individually, as they were too busy to gather for another formal group event. This iterative process was aimed at reducing observer dependency bias and increasing the depth and dependability of the findings (Lunyk-Child *et al*. 2001).

3.3.7 Limitations

The presence of two deans in the focus group discussion was both a strength and a weakness. A possible limitation could be the fact that this was the first focus group discussion in COHUU. The influence of having two deans present could have had an inhibiting influence on the rest of the participants, stemming from the cultural

nuances alluded to in Section 2.10 above, and could have introduced a social desirability bias (Nederhof, 1985).

The SRSSDL was validated as a tool to be used among health professionals (Cadorin *et al*. 2012). However, it was designed with the assumption that the study cohort was involved in some measure of overt training on SDL. This posed some constraint for the students at COHUU who were yet to be formally oriented towards SDL. Nonetheless, the questionnaire was presented without modification to the students, and as such the process could have rendered the tool different from that for which it had been validated.

4. Results

The results of this study are presented in the theme categories which were developed. These categories were used to arrive at the major themes that emerged by asking ‘so what’ and ‘then what’. The findings of the questionnaire administered to the students are presented before those from the focus group, and also within the focus group results where the Faculty discussed the students overall level of self-directedness.

4.1 Summary of results from the SRSSDL – see Appendix IV.

Forty out of a possible 43 final year students participated in this phase of the study which yielded a 93% response rate. The three students who did not participate were not available at the time. Ten participants were female, and 30 were male.

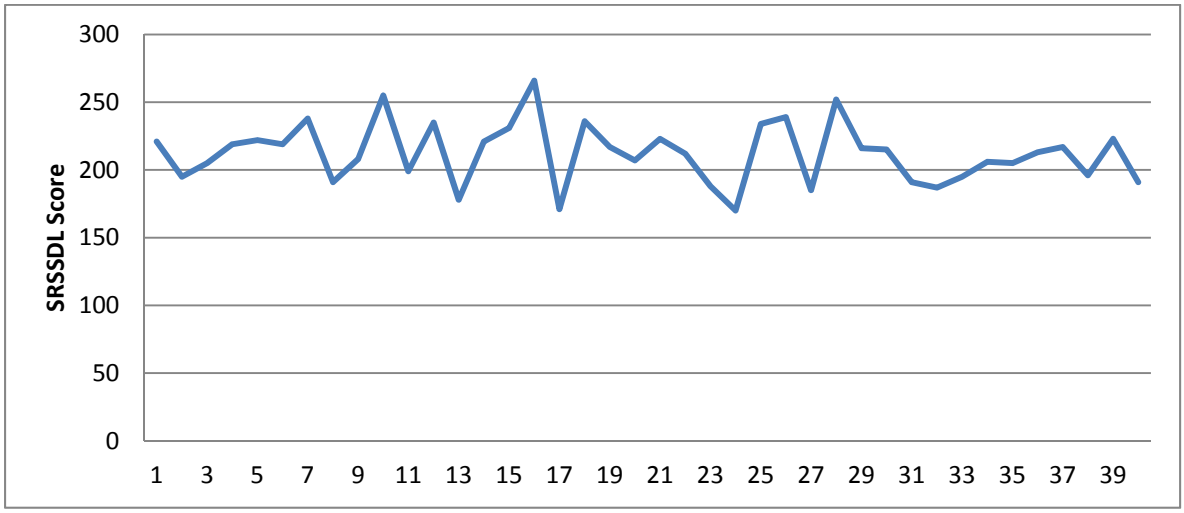
Thirty-four of the students were in the 20-29 year age group, while six were in the 30 – 39 year age group.

The mean score for self-directed behaviour was 212.3 ± 21.2 **(**Figure 1). This is in the moderate range of the SRSSDL scale which has the following interpretation:

“This is half-way to becoming a self-directed learner. Areas for improvement must be identified, evaluated and a strategy adopted with teacher guidance when necessary”.

None of the students had total scores in the ‘low’ range.

Figure 1 – A line chart which shows the SRSSDL score against the student's serial number



4.2 Results from the focus group discussion.

Table 1: A summary of the results of the qualitative aspect of the focus group discussion

Faculty perceptions about SDL	**What Faculty hope SDL would not turn out to be**	**What would make Faculty disapprove of SDL**
Initiative	Self-decided learning	Notion colonialism
Task shifting	Self-teaching	
Interactive		
Partnership		
Guided learning		
Student servanthood		
Self-improvement		

Faculty's perceptions about Self-Directed Learning

At the start of the focus group discussion, the Faculty observed that the term 'SDL' was new to them. The presentation of the categories derived from the discussion is therefore within the context of Faculty having had no previous knowledge of SDL. The categories identified were:

1. Self-motivated learning – the perception of Faculty was of a student who is enthusiastic about learning, and is determined to learn. Implicit in the comments was that the object of learning was felt to be specific to what the

teacher presents, as Faculty had previously operated within a teacher-centred curriculum and had almost certainly been trained within such a system. The idea of SDL met with initial approval as it was seen that in this 'new system', students would not need to be coerced to attend classes, read up on lectures or carry out assignments. Thus SDL would usher in a sense of seriousness about learning in the students.

A relevant quote is *"… the main thing is there that there is somebody who is trying to have some kind of self-motivation to learn something, hold it, improve on it without really being coerce (sic), pushed, begged, there is self-determination to achieve something."*

2. Initiative – the Faculty embraced the idea of students showing some initiative in reading wider than the scripted material, but always somewhere along the beaten path. It was clear that Faculty again approved of SDL as they felt that it could 'promise' to inculcate this attitude of initiative in their students.

   One Faculty member said *"we feel that there could be a room for initiative and also a room to explore other means even at the learning level; the students may be able to discover other things for themselves"*

   Another member of faculty said: "… *if these things are self-directed, you know, am not going to run after any students".*

   'Run after' in colloquial usage conveys the sense of standing over someone, usually a minor, to ensure the person obeys an instruction in detail. This echoes the feeling that this lecturer feels that he presently *runs after* his students and relishes a method of teaching that relieves him of that responsibility.

3. Task shifting – "what a relief", Faculty seemed to say. Now the students would finally have some work to do in this process of teaching and learning and lessen the burden on the teacher. One could almost see them looking forward to transferring more of the load of learning to the students.

   The students would no longer be having a teacher 'on the run' after them but would be required to carry more of the load of acquiring new knowledge and skills. A statement of one of the participants explains this:

   "It (SDL) will reduce our (teachers') work"

4. Interactive – this conveyed the sense of being active, involved, talking to each other and changing each other. Interactive learning was seen to indicate learning in a group of which the teacher is a part, which was reflected by another teacher's concept of equality, in which the traditional hierarchy

between teacher and student was de-emphasised. Participants comments on this in the focus group discussion were *inter alia* the following:

"… people in groups, making it learning, interacting…"

"… sit, not in a classroom, in a circular form…"

5. Partnership – Faculty felt that the success of big American companies hinged on partnership and the same concept should be leveraged to help students feel more involved with their learning. It was not clear how the issue of equality featured here.

   One comment was "… *many of these companies in the United States succeeded because they made the staff part of the company."*

   Another comment went *"… what we are driving at here is to make the students part and parcel of what they get…"*

   This concept of partnership was not further explored to grasp whether it was perceived to operate only in the context of teaching / learning encounters, or whether the students would have a say in the planning and evaluation of their learning.

6. Guided learning – the teachers seemed to emphasise the need to guide the students in the discovery of medical knowledge and to acquire relevant skills, whilst following the prescribed curriculum.

   A related comment was *"It's more of encouraging participation that is, that is what we are talking about, but still under you know, a guide; still under the framework of an institution".*

7. Student servanthood - the student is given a specific subject to read at the teacher's instruction and must do so to be graded, without the student's input or formal encouragement to explore other related subjects. This somewhat pessimistic term was coined because there was a sense of the Faculty having been accustomed to a subject-based curriculum, in which the aim was to cover the syllabus and not necessarily to ensure that learning had occurred.

   A teacher said "...*giving the subject to the student or whoever is learning to go read around*"

8. Self-improvement – one teacher conveyed the perception that the 'Self' was the focus of self-directed learning.

He said *"it's a type of learning to improve one-self-directed at oneself, not reading for knowledge or to pass exam"*.

The encouraging perceptions of Faculty at COHUU about SDL are that it is a new concept in which the students would show self-motivation towards learning and initiative in their pursuit of deep learning. Also, SDL would reduce the teacher's work load, as it creates a sense in the students that they are partners in the learning process. It would be implemented in an interactive group-based setting in which hierarchy is de-emphasised. The concept of teacher guidance resonated among the members of the focus group. Minority opinions of SDL were that of student servanthood and SDL as self-improvement, not just for knowledge.

What the Faculty hope Self-Directed Learning would not turn out to be

The Faculty expressed the ideas discussed here after reviewing the definition of SDL by Knowles (1975). The wording of that definition "a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies and evaluating learning outcomes" seemed to elicit negative sentiment, especially the phrases that follow *a "process in which individuals take the initiative".* The categories developed from this segment of the discussion are discussed below:

1. Self-decided learning – Faculty were not keen on the idea that the student decides what and how to learn. This idea was in relation to the phrase - *diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies.* The following statement illustrates this:

   "(the student is assumed to say) ok I want to direct myself and learn.....…only pathology because (sic) am self-directed"

   Another related comment was *"if you put a medical student to stay on his own and start learning everything by himself, set goals for himself and decide appropriate learning strategies by himself, I don't think it's going to be better at the end of the day. He has a curriculum. He has a period of time he needs to learn. He needs to interact with others along the learning process"*

2. Self-teaching - learning by using the curriculum as a guide but without the teacher. This was expressed to question the trend of discussion that seemed to displace the teacher from the centre of the learning process.

A teacher said *"Giving us the impression the student is self-directed, doesn't need the teachers again"*

In summary, the Faculty leadership at COHUU was not satisfied with the definition of SDL by Knowles (1975). They understood that definition to mean that the self-directed student could execute self-decided learning or at least self-teaching. Such a person, it was implied, would not be a student. They preferred a definition of SDL that allowed the Faculty to guide the student into all the complex knowledge and skills required of a medical doctor, which must be laid down one layer at a time.

What the Faculty feel would make them disapprove of Self-Directed Learning

Notion colonialism - the Faculty's cogitations on the definition by Knowles progressed to the extent of considering that the design of SDL was imported and not relevant to our medical school.

An assertion was *"It doesn't mean that ok once an idea comes from Europe, I mean, it's a perfect idea. That that is the main thing that has to be done?"*

It was suggested that the wordings in 'self-directed learning' be changed, as those words were *incongruent* with the idea intended.

"To look at the words critically, something should be done to really carry the meaning".

During the focus group discussion, the participants were prompted to give ideas about how they think a university can use SDL within the curriculum they are familiar with. Discussions centred mostly around a modified SDL model, where SDL is altered to fit a traditional curriculum. Responses from the participants in this regard were the following:

"We can apply it partially, but there are some things that you still need to go through basic curriculum.... the basic process that has been there which has been found to be useful…"

Also, "… there is no real complete… I mean absolute freedom in self-learning, it will still be within a context of a curriculum".

A definition of achieving SDL that fits the concept of the Faculty at COHUU is as follows – developing SDL entails the self-motivated student demonstrating initiative under the guidance of teachers who use interactive fora for teaching and with whom the students work in a partnership that dynamically shares the task of learning.

4.3 Results of the more structured aspects of the interview.

What is the impression of the self-directedness in learning of our final year students?

The Faculty rated them as low, unanimously. They expressed surprise that the students thought of themselves as having moderate SDL behaviour. This was a qualitative overview of the student scores, as they did not go into the detail of reviewing the questionnaire and its various aspects. A sample comment was:

> "*I would really want to score our student low...but if we...direct them in this self-directed learning focus, I guess from low they can get to high"*

What is our impression about the maturity with respect to age of our students?

The Faculty expressed concern about the relatively young age of our students, as they felt the students were too young to be usefully engaged in an adult learning venture, since they had not much life experience on which to draw. Some quotes inter alia are:

> "...*they are really very young"*

> "*We don't really have adults in our medical school. So I don't know, the principles of adult education, how it would (apply)"*

Is self-directed learning an important skill for COHUU graduates?

The Faculty were glad to endorse SDL as an important concept to be developed in this medical school. One group member's idea was:

> "*I think it's necessary that we should imbibe such concepts, the concepts of SDL, even from the pre-clinical years of a student"**

Do we think our Faculty has the skills-set to work out a self-directed learning based curriculum?

A count of the responses, revealed that 5 out of 9 members indicated 'yes'. This more or less even spread indicates the faculty leadership were undecided about their capacity to coordinate an SDL based curriculum.

*This quote implies that the enabling environment for SDL should, in the opinion of the discussant, be set up from the pre-clinical period.

5. Discussion

Most of the articles reviewed by the researcher convey the impressions of faculty and students who have been allowed to framework SDL as part of their teaching and learning environment, for a certain period (Lunyk-Child *et al*. 2001; Hewitt-Taylor, 2002). It would appear that this study represents the first attempt to consider SDL behaviour and perceptions before setting up a framework to formally develop SDL as an outcome of a teaching and learning system.

The key findings of this study centre on the perceptions of the faculty focus group, which revealed a reluctance to participate in a venture that could make students decide what and when to learn. Rather, the group members have expectations about what it would take to produce self-directed learners and are willing to commit to this model. Below are arguments about these perceptions and how they are represented in literature, starting with self-motivation.

The members spoke of motivation and determination to learn, which are essential components of developed SDL (Schmidt, 2000). Schmidt (2000), however emphasises the key role of teacher support for the motivated student, as against what he terms ‘radical SDL’ which claims to offer the student the freedom to decide what and how to study. This balanced view is preferred by the faculty at COHUU. A look at initiaitve follows.

Initiative is a word common to definitions of SDL – (Knowles, 1984; Hammond and Collins in Premkumar *et al*. 2013) and although there could be different shades of meaning, the sense of initiating learning filters through. Interpreted as ‘directedness’, the demonstration of initiative in learning has been found to be limited in a problem-based programme - Schmidt (2000) had noted that medical students in an SDL based programme derive their ‘directedness’ or initiative from many sources – cues and hints from teachers, impressions from previous examinations, older students etc., suggesting that they show only muted initiative. The faculty related ‘initiative’ to showing a personal disposition towards deep learning of teacher–directed material but this differs from the idea in SDL which conveys the concept of the student deciding which resources to use in say, solving a problem. The idea of deep learning of teacher-directed material relates well to SRL.

The sense that the facilitation of SDL involves shared responsibility and hence, reduces the number of times teachers meet formally with students, is illustrated by PBL curricula in which the facilitators meet with the students two to three times a week. It is arguable whether the work done to prepare for the group discussions results in less work overall, when compared with preparing for didactic lectures. In addition, most medical schools use hybrid programmes that combine SDL (as PBL), with traditional methods of teaching, making it more difficult to determine which

represents a higher work load for the faculty. It is certainly true that by pursuing the development of SDL, the students take more responsibility for their learning, making them partners in the learning process. This paragraph has drawn 'task-shifting' and 'partnership' into the discourse, which were both strongly reflected in faculty's perceptions of SDL. However, these ideas also resonate in SRL.

The interactive group-based setting envisioned by faculty is also put into practice in the small group-learning facet of PBL, in which the group may number between eight to ten students; the teacher (facilitator) in that setting is trained to de-emphasise hierarchy, becoming a co-learner as it were (Wood, 2003). Due to the constraints of space at COHUU, some difficulty with small group settings can be expected. Thus the large group fora which currently prevail are likely to continue and as such it would be more feasible to operate along the lines of SRL, which can be implemented in large group settings. Also, SRL does not place emphasis on reducing hierarchy, as does SDL.

It is likely that the reduced emphasis on hierarchy, which extends to faculty and students relating on a first name basis in established PBL programmes, would be difficult in the Nigerian setting, due to the strong emphasis on hierarchy in the prevailing culture.

Faculty were loath to adopt a concept that seemed to do away with the need for teachers. Of course, in the real world setting of PBL, teachers are necessary as facilitators, but faculty's discomfort with the definition of SDL by Knowles (1975), could pose difficulties with its implementation.

A closer look at some of the difficult perceptions follows:

Self-decided learning – this concept was expressed by the faculty as a facet of SDL which was not compatible with medical training, because there is a defined curriculum and a fixed time to completion. There was also the sense that the concept of progressively increasing autonomy in learning was unfamiliar to faculty (Miflin, Campbell & Price, 2000). Thus the view that a student can independently determine the subjects to study in a medical school (or any school for that matter), would be anathema to faculty in most medical schools and be unacceptable to the stakeholders to whom the school is socially accountable (Boelen & Woolard, 2011). However, this may be a case of throwing the baby out with the bathwater, as learning to be autonomous is in fact an acknowledged aim of self-directed learning (Candy 1991 in Ainoda *et al.* 2005). Nonetheless, the concept of faculty at COHUU about self-decided learning is strewn with the sense of autogenic autonomy, in which one determines from within, a certain course of action without any external influence (Ryoo, 2011) and would indeed be unattainable in an institution. Hence, Grows' (1991) assertion that radical SDL is not feasible in an institution situates the position

of faculty within what is acknowledged in literature. The next aspect will be self-teaching or autodidaxy.

Autodidaxy is a term which has been used synonymously with SDL in the literature (Ainoda, Onishi & Yasuda, 2005) and speaks of self-learning or self-teaching and is considered a process in self-directed learning. Autodidactism on the other hand, is self-teaching without formal education (Wikipedia, 2014) and is thus more in tune with the comment of the COHUU Faculty who averred that giving the student the curriculum to study without the teacher, would not be accepted. Again, faculty at COHUU have intuitively set an acceptable boundary for self-directed learning, bearing in mind that the more senior students in an SDL programme are expected to require much less teaching support than the first year students (Miflin, Campbell & Price, 2000).

Faculty were uncomfortable with what seemed like a wholesale adoption of a foreign idea (in SDL), without local input or relevance. This was based on the unwieldy nature of the definition by Knowles (1975) and the impression that our students are too young to motivate adult learning principles – considering medical schools as a whole in the developed world to admit more mature students (post pre-med), for whom adult learning is probably more relevant. Medical students in Nigeria are admitted after secondary school education and are therefore expected to be rather young.

The faculty were unanimous in rating our students in the ‘low’ range of self-directed learning behaviour and were rather surprised that the students rated themselves as ‘moderate’ overall. This faculty rating can be misleading because the faculty have not been oriented to the workings of SDL and so may not have the experience to make such a judgement. Rather, the general assessment by faculty is more likely to represent their sense of the students’ level of motivation, initiative and commitment to learning. There was no student whose grade was in the ‘low’ range and the mean score of 212.3 was quite close to the boundary between ‘moderate’ and ‘high’ – 220. These findings may reflect the tendency in physicians and medical students who are not capable in a particular area to overrate themselves, while the competent ones underrate themselves (Colthart *et al*. 2008; Duffy & Holmboe, 2006; Gordon, 1991). It is noteworthy that the final year students at COHUU are not likely to function at such a high level of self-directed behaviour without training to develop the skills of SDL, yet it is also possible that the faculty have developed more SDL traits in the students than they give themselves credit for. This inconsistency in the results of the SDL behaviour data generated by the two methods (qualitative and quantitative), has been noted by Denzin (Johnson, Onwuegbuzie & Turner, 2007) to be one of the possible outcomes of mixed methods research.

The SRSSDL scale describes a ‘low’ score as follows:

"Guidance is definitely needed from the teacher. Any specific changes necessary for improvement must be identified and a possible complete restructuring of the methods of learning" – see Appendix III.

It is fortuitous that this study signals just that – 'a complete restructuring of the curriculum'. In addition, this study reveals the willingness of faculty to avail themselves of training in order to engage a COHUU model aimed at developing SDL in the students.

The age of the students was noted to be in the 20 – 29 years age range, for 34 (85%) of the students and to be in the 30 – 39 year age group for the remaining six (15%) of the students. A more useful age range would have been 20 – 25 years or 26 – 30 years, as this would have enabled an assessment of the number of students in the 20 -25 year age group. The Nigerian medical education system takes in graduates after secondary school and it is the opinion of faculty at COHUU that the students are "very young", do not have much life experience and thus may not qualify to fully engage adult learning principles. This is significant because self-awareness and self-management - both crucial platforms of SDL - should intuitively improve with age. The faculty was of the impression that the age range at intake into medical training was 16 – 18 years. This would place the final year students in this six-year programme at about 22 – 24 years.

Another factor which might have resulted in faculty becoming uncomfortable with the definition of SDL by Knowles (1975) is the impression that such a process could not be wholly implemented within a medical school in which large numbers of students must learn defined complex skills in a specified time frame. This opinion is shared by many authors, who have also considered SDL in its original definition to be a mechanism that needs to be modified within an institution (Grow 1991; Miflin, Campbell & Price, 2000). The undesirable connotations of SDL which the faculty considered - self-decided learning and self-teaching, set limits on what the faculty is willing to engage with when COHUU moves towards developing self-directing life-long learners.

As has been implied in this discussion, faculty at COHUU are unwilling to implement a radical SDL curriculum, but are willing to work towards producing self-directing life-long learners using the model shown in box 2.
This COHUU model is quite different from the definitions of SDL shown in paragraph 2.1 and in terms of motivation and teacher guidance, is more akin to self-regulated learning than self-directed learning. This suggests that faculty at COHUU may prefer the well-defined, teacher-driven

Box 2

The COHUU model for producing self-directing life-long learners –

"The self-motivated student demonstrating initiative under the guidance of teachers who use interactive fora for teaching and with whom the students work in a partnership that dynamically shares the task of learning."

concept, frameworks and outcomes of SRL to the more student-led 'fuzzy' concept of SDL, bearing in mind that due to the similarity between the two concepts, motivating SRL would produce self-directing life-long learners.

6. Limitations

In order to interpret in detail the students' level of self-directedness in learning would have required a Faculty more conversant with the term SDL in concrete and practical terms. This remains a short-coming of this study.

The students' SDL status was not compared against a gold-standard as obtained in other studies on SDL. However, the researcher is not aware of another tool in literature that assesses self-directed learning behaviour in a medical cohort.

The concept of SRL was not discussed with faculty in this study and thus its place at COHUU is yet to be determined. This gives room for more studies on how best to produce self-directed life-long learners in the COHUU context.

7. Conclusion

The main aim of this study was to evaluate the status of self-directed learning behaviour of final year students and the perceptions of faculty towards SDL in the college of health sciences, University of Uyo. The study suggests that the final year students have a 'low' to 'moderate' level of SDL behaviour. Faculty are committed to implementing their own model of developing self-directed learners, and expect that the curriculum will be set up to motivate the students to show personal initiative in learning and not that students will teach themselves medicine.

A definition of developing SDL has been derived from the comments of Faculty leadership at COHUU, which differs from the standard definition of SDL and is easier to relate to SRL.

8. Recommendations

In view of the aim of COHUU, namely to produce self-directed, life-long learners, there is a need to determine whether SRL, a concept proven to produce sustained self-directedness in learning, would be acceptable to the faculty at COHUU.

This work can serve as a needs analysis with respect to the basic concepts of the faculty at COHUU concerning developing self-directed learners. Faculty development fora can be designed that will be relevant to their needs.

The outcomes of this study are transferable to other medical schools in traditional hierarchical cultures, such as in Nigeria and other West African countries.

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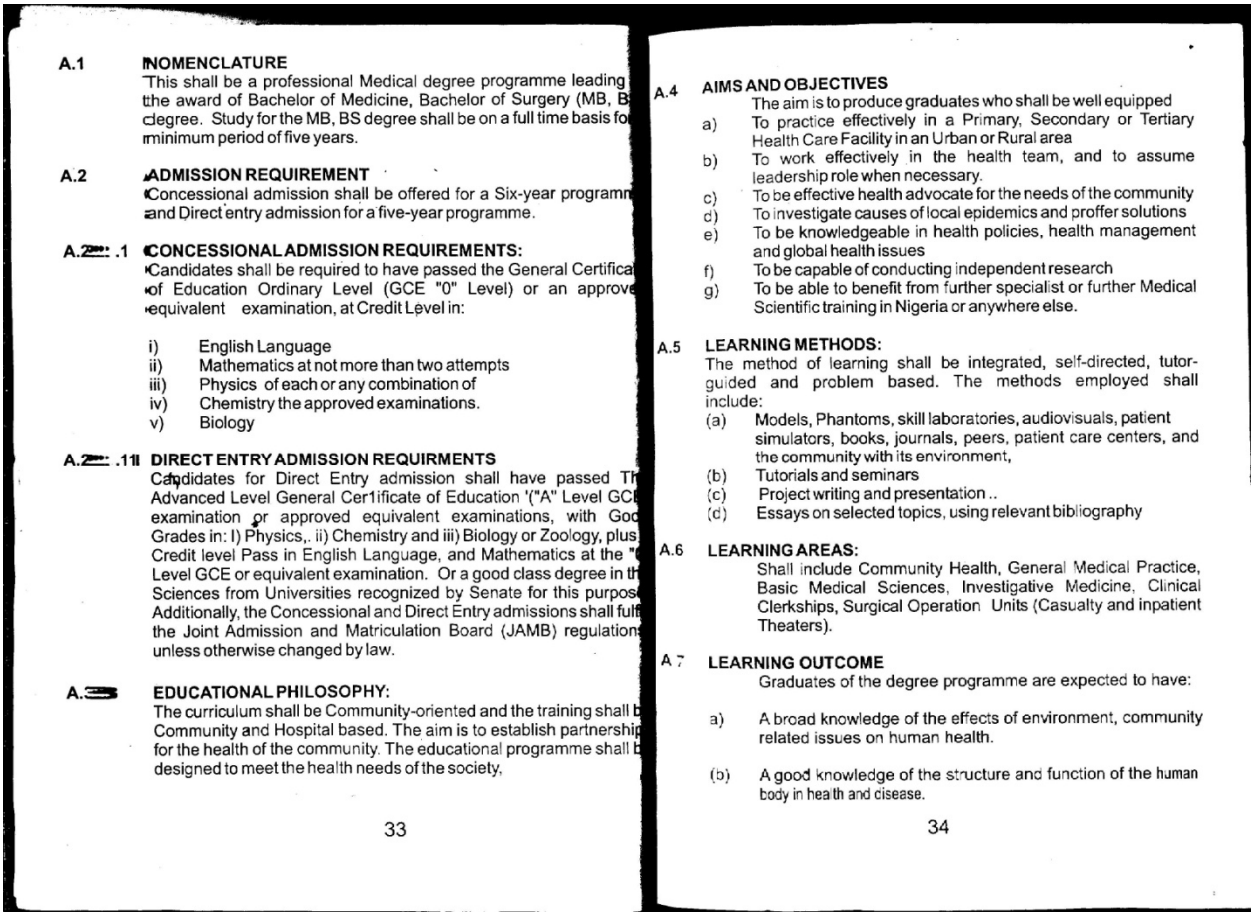
10. Appendices

Appendix I – Aims and objectives of the medical student curriculum, College of Health Sciences, University of Uyo



A.1 **NOMENCLATURE**
This shall be a professional Medical degree programme leading t the award of Bachelor of Medicine, Bachelor of Surgery (MB, B degree. Study for the MB, BS degree shall be on a full time basis fo minimum period of five years.

A.2 **ADMISSION REQUIREMENT**
Concessional admission shall be offered for a Six-year programm and Direct entry admission for a five-year programme.

A.2 .1 **CONCESSIONAL ADMISSION REQUIREMENTS:**
Candidates shall be required to have passed the General Certifica of Education Ordinary Level (GCE "0" Level) or an approve equivalent examination, at Credit Level in:

i) English Language
ii) Mathematics at not more than two attempts
iii) Physics of each or any combination of
iv) Chemistry the approved examinations.
v) Biology

A.2 .11 **DIRECT ENTRY ADMISSION REQUIRMENTS**
Candidates for Direct Entry admission shall have passed Th Advanced Level General Certificate of Education '("A" Level GC examination or approved equivalent examinations, with Goo Grades in: I) Physics,. ii) Chemistry and iii) Biology or Zoology, plus Credit level Pass in English Language, and Mathematics at the " Level GCE or equivalent examination. Or a good class degree in th Sciences from Universities recognized by Senate for this purpos Additionally, the Concessional and Direct Entry admissions shall fulf the Joint Admission and Matriculation Board (JAMB) regulation unless otherwise changed by law.

A. **EDUCATIONAL PHILOSOPHY:**
The curriculum shall be Community-oriented and the training shall b Community and Hospital based. The aim is to establish partnership for the health of the community. The educational programme shall b designed to meet the health needs of the society.

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A.4 **AIMS AND OBJECTIVES**
The aim is to produce graduates who shall be well equipped
a) To practice effectively in a Primary, Secondary or Tertiary Health Care Facility in an Urban or Rural area
b) To work effectively in the health team, and to assume leadership role when necessary.
c) To be effective health advocate for the needs of the community
d) To investigate causes of local epidemics and proffer solutions
e) To be knowledgeable in health policies, health management and global health issues
f) To be capable of conducting independent research
g) To be able to benefit from further specialist or further Medical Scientific training in Nigeria or anywhere else.

A.5 **LEARNING METHODS:**
The method of learning shall be integrated, self-directed, tutor-guided and problem based. The methods employed shall include:
(a) Models, Phantoms, skill laboratories, audiovisuals, patient simulators, books, journals, peers, patient care centers, and the community with its environment,
(b) Tutorials and seminars
(c) Project writing and presentation ..
(d) Essays on selected topics, using relevant bibliography

A.6 **LEARNING AREAS:**
Shall include Community Health, General Medical Practice, Basic Medical Sciences, Investigative Medicine, Clinical Clerkships, Surgical Operation Units (Casualty and inpatient Theaters).

A.7 **LEARNING OUTCOME**
Graduates of the degree programme are expected to have:

a) A broad knowledge of the effects of environment, community related issues on human health.

(b) A good knowledge of the structure and function of the human body in health and disease.

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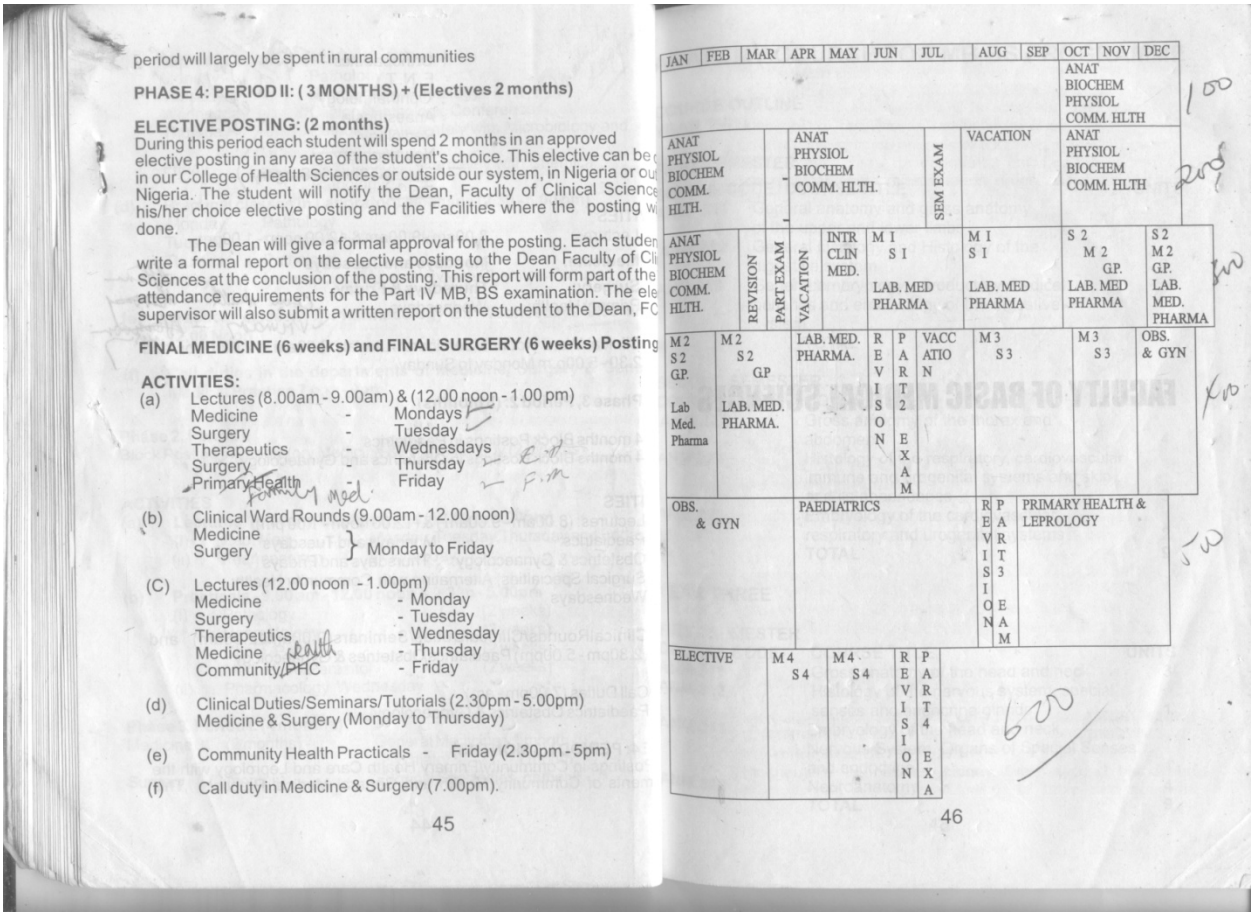
Appendix II – programme of courses in the medical student curriculum, College of Health Sciences, University of Uyo



period will largely be spent in rural communities

PHASE 4: PERIOD II: (3 MONTHS) + (Electives 2 months)

ELECTIVE POSTING: (2 months)
During this period each student will spend 2 months in an approved elective posting in any area of the student's choice. This elective can be d in our College of Health Sciences or outside our system, in Nigeria or ou Nigeria. The student will notify the Dean, Faculty of Clinical Science his/her choice elective posting and the Facilities where the posting w done.

The Dean will give a formal approval for the posting. Each studen write a formal report on the elective posting to the Dean Faculty of Cli Sciences at the conclusion of the posting. This report will form part of the attendance requirements for the Part IV MB, BS examination. The ele supervisor will also submit a written report on the student to the Dean, FC

FINAL MEDICINE (6 weeks) and FINAL SURGERY (6 weeks) Posting

ACTIVITIES:

(a) Lectures (8.00am - 9.00am) & (12.00 noon - 1.00 pm)
Medicine - Mondays
Surgery - Tuesday
Therapeutics - Wednesdays
Surgery - Thursday
Primary Health - Friday

(b) Clinical Ward Rounds (9.00am - 12.00 noon)
Medicine
Surgery } Monday to Friday

(C) Lectures (12.00 noon - 1.00pm)
Medicine - Monday
Surgery - Tuesday
Therapeutics - Wednesday
Medicine - Thursday
Community/PHC - Friday

(d) Clinical Duties/Seminars/Tutorials (2.30pm - 5.00pm)
Medicine & Surgery (Monday to Thursday)

(e) Community Health Practicals - Friday (2.30pm - 5pm)

(f) Call duty in Medicine & Surgery (7.00pm).

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JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
									ANAT BIOCHEM PHYSIOL COMM. HLTH		
ANAT PHYSIOL BIOCHEM COMM. HLTH.			ANAT PHYSIOL BIOCHEM COMM. HLTH.			SEM EXAM	VACATION		ANAT PHYSIOL BIOCHEM COMM. HLTH		
ANAT PHYSIOL BIOCHEM COMM. HLTH.	REVISION	PART EXAM	VACATION	INTR CLIN MED.	M I S I LAB. MED PHARMA		M I S I LAB. MED PHARMA		S 2 M 2 G.P. LAB. MED PHARMA		S 2 M 2 G.P. LAB. MED. PHARMA
M 2 S 2 G.P. Lab Med. Pharma	M 2 S 2 G.P LAB. MED. PHARMA.		LAB. MED. PHARMA.	REVISION	PART 2 EXAM	VACCATION	M 3 S 3		M 3 S 3		OBS. & GYN
OBS. & GYN			PAEDIATRICS			REVISION	PART 3 EAM		PRIMARY HEALTH & LEPROLOGY		
ELECTIVE		M 4 S 4		M 4 S 4		REVISION	PART 4 EXA				

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Appendix III – Self rating scale for self-directed learning (SRSSDL)

Code no._____ Sex_____ Discipline_____ Date of testing _____

Age:	Tick
20-29	
30-39	
40-49	
50 -59	
>60	

This response sheet is to try to identify learner's levels of self–directedness in learning in higher education. Please read and encircle the most appropriate response for each statement indicating the level at which you rate yourself. Please note that your first reaction to the statement is the most accurate response; therefore, do not spend too long a time on one item. Your responses will be kept confidential, so please feel free to respond. The 'any other' space is provided for you to add any other issues about self-directedness in learning you think relevant. A 'scoring sheet' is included for you to assess the level of your self-directedness in learning.

Areas of Self-Directedness in learning

Response Key: 5 = Always 4 = Often 3 = Sometimes 2 =Seldom; 1 = Never

1	Awareness	Score				
1.1	I identify my own learning needs	5	4	3	2	1
1.2	I am able to select the best method for my own learning	5	4	3	2	1
1.3	I consider teachers as facilitators of learning rather than providing information only	5	4	3	2	1
1.4	I keep up to date on different learning resources available	5	4	3	2	1
1.5	I am responsible for my own learning	5	4	3	2	1
1.6	I am responsible for identifying my areas of deficit	5	4	3	2	1
1.7	I am able to maintain self-motivation	5	4	3	2	1
1.8	I am able to plan and set my learning goals	5	4	3	2	1
1.9	I have a break during long periods of work	5	4	3	2	1

1.10	I need to keep my learning routine separate from my other commitments	5	4	3	2	1
1.11	I relate my experience with new information	5	4	3	2	1
1.12	I feel that I am learning despite not being instructed by a lecturer	5	4	3	2	1
1.13	Any other	5	4	3	2	1
2	**Learning Strategies**	**Score**				
2.1	I participate in group discussions	5	4	3	2	1
2.2	I find peer coaching effective	5	4	3	2	1
2.3	I find 'role play' is a useful method for complex learning	5	4	3	2	1
2.4	I find inter-active teaching-learning sessions more effective than just listening to lectures	5	4	3	2	1
2.5	I find simulation in teaching-learning useful	5	4	3	2	1
2.6	I find learning from case studies useful	5	4	3	2	1
2.7	My inner drive directs me towards further development and improvement in my learning	5	4	3	2	1
2.8	I regard problems as challenges	5	4	3	2	1
2.9	I arrange my self-learning routine in such a way that it helps develop a permanent learning culture in my life	5	4	3	2	1
2.10	I find concept mapping is an effective method of earning	5	4	3	2	1
2.11	I find modern educational interactive technology enhances my learning process	5	4	3	2	1
2.12	I am able to decide my own learning strategy	5	4	3	2	1
2.13	Any other	5	4	3	2	1
3	**Learning activities**	**Score**				
3.1	I rehearse and revise new lessons	5	4	3	2	1
3.2	I identify the important points when reading a chapter or an article	5	4	3	2	1
3.3	I use concept mapping/outlining as a useful method of comprehending a wide range of information	5	4	3	2	1
3.4	I am able to use information technology effectively.	5	4	3	2	1
3.5	My concentration intensifies and I become more attentive when I read a complex study content	5	4	3	2	1
3.6	I keep annotated notes or a summary of all my ideas, reflections and new learning	5	4	3	2	1

3.7	I enjoy exploring information beyond the prescribed course objectives	5	4	3	2	1
3.8	I am able to relate knowledge with practice	5	4	3	2	1
3.9	I raise relevant question(s) in teaching-learning sessions	5	4	3	2	1
3.10	I am able to analyse and critically reflect on new ideas, information or any learning experiences	5	4	3	2	1
3.11	I keep an open mind to others' point of view	5	4	3	2	1
3.12	I prefer to take any break in between any learning task	5	4	3	2	1
3.13	Any other	5	4	3	2	1
4	**Evaluation**	**Score**				
4.1	I self-assess before I get feed back from instructors	5	4	3	2	1
4.2	I identify the areas for further development in whatever I have accomplished	5	4	3	2	1
4.3	I am able to monitor my learning progress	5	4	3	2	1
4.4	I am able to identify my areas of strength and weakness	5	4	3	2	1
4.5	I appreciate when my work can be peer reviewed	5	4	3	2	1
4.6	I find both success and failure inspire me to further learning	5	4	3	2	1
4.7	I value criticism as the basis of bringing improvement to my learning	5	4	3	2	1
4.8	I monitor whether I have accomplished my learning goals	5	4	3	2	1
4.9	I check my portfolio to review my progress	5	4	3	2	1
4.10	I review and reflect on my learning activities	5	4	3	2	1
4.11	I find new learning challenging	5	4	3	2	1
4.12	I am inspired by others' success	5	4	3	2	1
4.13	Any other	5	4	3	2	1
5	**Interpersonal skills**	**Score**				
5.1	I intend to learn more about other cultures and languages I am frequently exposed to	5	4	3	2	1
5.2	I am able to identify my role within a group	5	4	3	2	1
5.3	My interaction with others helps me to develop the insight to plan for further learning	5	4	3	2	1
5.4	I make use of any opportunities I come across	5	4	3	2	1

5.5	I need to share information with others	5	4	3	2	1
5.6	I maintain good inter-personal relationships with others	5	4	3	2	1
5.7	I find easy to work in collaboration with others	5	4	3	2	1
5.8	I am successful in communicating verbally	5	4	3	2	1
5.9	I identify the need for inter-disciplinary links for maintaining social harmony	5	4	3	2	1
5.10	I am able to express my ideas effectively in writing	5	4	3	2	1
5.11	I am able to express my views freely	5	4	3	2	1
5.12	I find it challenging to pursue learning in a culturally diverse milieu	5	4	3	2	1
5.13	Any other	5	4	3	2	1

Scoring Sheet: Self-Rating Scale for Self- Directedness in Learning (SRSSDL)

Once you have responded to all the items of the SRSSDL, transfer the scores to the correct boxes below and add up your scores as in the following example:

Example:

Score	5	4	3	2	1	
Items 1.1-1.12	3	4	3	5	0	
Total	15	16	9	10	0	Total score = 50

Score	5	4	3	2	1	
Items 1.1-1.12						
Total						Total score =

Score	5	4	3	2	1	
Items 2.1-2.12						
Total						Total score =

Score	5	4	3	2	1	
Items 3.1-3.12						
Total						Total score =

Score	5	4	3	2	1	
Items 4.1-4.12						
Total						Total score =

Score	5	4	3	2	1	
Items 5.1-5.12						
Total						Total score =

Add all the total scores

☐ + ☐ + ☐ + ☐ + ☐ = ☐

Check the grand total score with the following scoring range in order to identify your level of self-directedness in learning.

Scoring range	Level of self-directedness in learning	Interpretation
60-140	Low	Guidance is definitely needed from the teacher. Any specific changes necessary for improvement must be identified and a possible complete re-structuring of the methods of learning
141-220	Moderate	This is half way to becoming a self-directed learner. Areas for improvement must be identified, evaluated and a strategy adopted with teacher guidance when necessary
221-300	High	This indicates effective self-directed learning. The goal now is to maintain progress by identifying strengths and methods for consolidation of the students' effective self-directed learning

No matter what your total score, it is essential that you pay particular attention to any individual items of the SRSSDL in which you have scored below 3, as these are the areas in which you definitely need to improve.

SRSSDL - Nurse Researcher; vol. 14, no. 2, pp. 66-83 with permission (see Appendix IX)

Appendix IV - Table showing data of the final year students, resulting from using the SRSSDL

	Age	Sex	Grade	Score
1	a	m	high	221
2	a	m	mod	195
3	a	f	mod	205
4	a	m	mod	219
5	a	f	high	222
6	a	m	mod	219
7	b	m	high	238
8	a	m	mod	191
9	a	f	mod	208
10	a	m	high	255
11	a	m	mod	199
12	a	m	high	235
13	a	m	mod	178
14	b	m	high	221
15	a	m	high	231
16	b	m	high	266
17	a	m	mod	171
18	a	m	high	236
19	a	f	mod	217
20	a	m	mod	207
21	a	m	high	223
22	b	m	mod	212
23	a	m	mod	188
24	a	m	mod	170
25	a	m	high	234
26	a	m	high	239
27	a	m	mod	185
28	a	m	high	252
29	a	f	mod	216
30	a	m	mod	215
31	b	m	mod	191
32	a	f	mod	187
33	a	f	mod	195
34	a	m	mod	206
35	a	f	mod	205
36	a	m	mod	213
37	a	f	mod	217
38	b	m	mod	196

39	a	f	high	223
40	a	m	mod	191

Mean score – **212.3**, graded as **moderate** self-directedness in learning

Appendix V – a picture showing the focus group discussion at COHUU in session

Appendix VI - Issues and questions put before Faculty during the focus group discussion

How many of us have participated in a focus group discussion

Perception of Faculty about SDL

What is our impression of our final year students in respect of their self-directedness in learning?

What is our impression about the maturity with respect to age, of our students?

Is self-directed learning an important skill for COHUU graduates?

What is our impression about the feasibility of imbuing SDL in COHUU at the present skill set of our Faculty?

Appendix VII - Codebook

Format

Code – Meaning ascribed

Example(s) *in italics*

New – not heard about it

Line 3 – (SDL) *for me it is something that is very new I must say I don't know much about it*

Line 33 – (SDL) *is a totally new concept to me and I did not even know it was in the curriculum*

Line 99 – (SDL) *to me is a new word*

Atypical example –

Line 261- *I have never attended any workshop on SDL*

Interactive – active, involved, talking to each other and changing each other

Line 10 - *people in groups, making it learning interacting*

Line 20 - *a back and forth sort of learning*

Line 37 – *getting the students more involved*

Line 41 – (students) *more involved*

Line 102 – *encouraging the student to be personally involved in their academic development*

Student-servanthood – the student is given a specific subject to read at the teachers pleasure and must do so to be graded, without the students input or formal encouragement to explore (it looks like SDL but the lack of student initiative just makes it glorified academic slavery)

Line 13 - *giving the subject to the student or whoever is learning to go read around*

Atypical example

Line 47 – *not just something handed down*

Equality – de-emphasise hierarchy

Line 15 – *sit, not in a classroom, in a circular form*

Universal – suitable for all medical schools

Line 75 – (SDL) *should be used in all medical schools*

Presumably better – (SDL) presumed to be a better learning method than older didactic methods

Line 76 - *it must have been discovered that it is better than the didactic method that had been used before*

Incongruent – the words used in SDL are not aligned with the supposed meaning of the phrase

Line 70 – *to look at the words critically, something should be done to really carry the meaning*

Initiative – show initiative in learning; decide independently about learning

Line 109 - *we feel that there could be a room for initiative and also a room to explore other means even at the learning level the students may be able to discover other things for themselves*

Line 268 - *to be independent a student does not have to wait for the lecturer to come and give everything to him or her before he or her can learn such a thing*

Atypical example

Line 152 **-** *if these things are self-directed, you know, I'm not going to run after any students*

Atypical because it speaks not so much about independently driven learning but about a student driven to attend (mostly) didactic learners

Study plan – study plan or target to follow or achieve

Line 114 - *encouraged to designed their study plan to fit into their capacity at the set point in time*

Partnership – conveying the sense of having a stake in the learning process and outcome

Line 161 - *many of these companies in the United States succeeded because they made the staff part of the company*

Line 170 - *what we are driving at here is to make the students part and parcel of what they get*

Task-shifting – transferring more of the load of learning to the students

Line 173 - *It (SDL) will reduce our (teachers) work*

Self – improvement – learning focused on improving oneself

Line 203 - *it's a type of learning to improve oneself directed at one self, not reading for knowledge or to pass exam*

Self – decided learning – student decides what and how to learn

Line 238 - *If a student says "ok I want to direct myself and learn. …only pathology because am self-directed"*

Line 454 - *it will be difficult to allow the students to decide how they want to learn and what they want to learn before graduation if they all have to graduate within the same 6 or 7 years*

Self-motivated learning – enthusiastic, determined about learning

Line 249 - *the main thing is there that there is somebody who is trying to have some kind of self-motivation to learn something, hold it, improve on it without really being coerce, pushed, begged, there is self determination to achieve something*

Atypical

Line 614 - *Or is it* (SDL) *helping the student, self-confidence or whatever, so that whatever we present and he takes over from there*

Guided learning –guiding the students in the discovery towards medical knowledge and skills following the laid down curriculum

Line 511 *"It's more of encouraging participation that is, that is what we are talking about, but still under you know, a guide. Still under the framework of an institution".*

Notion colonialism – being subservient to a foreign (Caucasian) idea in-toto

Line 543 - *It doesn't mean that ok once an, you know, once an idea comes from Europe, I mean, it's a perfect idea. That that is the main thing that has to be done*

Modified SDL – modifying SDL to suit the curriculum

Line 559 - *We can apply it partially. You know. But there are some things that you still need to go through basic curriculum he still needs to go through basic curriculum the basic process that has been there which has been found to be useful.*

Line 575 – (Malcolm Knowles definition of SDL) *it's the learner that is initiating his or her own curriculum*

Line 580 - *A medical student will definitely not know what his learning objectives and all of that*

Self-teaching – learning by using the curriculum as a guide but without the teacher

Line 638 - *Giving us the impression the student, its self-directed, doesn't need the teachers again*

What is the impression of our final year students in respect of their self-directedness in learning?

Faculty rating is low

Line 422 – *I would really want to score our student low....but if we ....direct them in this self-directed learning focus, I guess from low they can get to high*

What is our impression about the maturity with respect to age, of our students?

Line 1057 – *they are really very young*

Line 1095 - *We don't really have adults in our medical school. So I don't know the principles of adult education, how it would (apply).*

Is self-directed learning an important skill for COHUU graduates?

Line 815 – *I think it's necessary that we should imbibe such concepts, the concepts of SDL, even from the pre-clinical years of a student*

Appendix VIII

Abstrak

Inleiding

Selfgerigte-leer word as ‘n essensiële element van lewenslange leer beskou. Lewenslange leer is uit die aard van die saak ‘n vereiste by professionele persone (soos gesondheidswetenskaplikes) in die poging om op die voorpunt te te bly in ‘n snelveranderende tegnologiese asook voordurende ontwikkelende gesondheidsorg omgewing. Tog is Selfgerigte-leer nie ‘n vereiste komponent van die kurrikulum in Nigeriese Mediese skole nie, en word dit ook nie geïmplimenteer in die Kollege van Gesondheidswetenskappe van die Universiteit van Oyo nie.

Doel van studie

Die studie het ten doel om die status van Selfgerigte-leer by finale jaar studente te evalueer, asook om die persepsies van die fakulteit daaroor te bepaal by ‘n Nigeriese Mediese skool.

Metodologie

‘n Gemegde navorsingsbenadering was gevolg waar gebruik gemaak is van kwantitatiewe sowel as kwalitatiewe navorsingsmetodes. In die navorsingsontwerp is kwantitatief van ‘n self-graderingskaal gebruik gemaak om te bepaal tot watter mate Selfgerigte-leer by studente geskied. ‘n Fokusgroep bespreking met lede van die fakulteit het die kwalitatiewe data voorsien.

Resultate

Mediese studente aan die universiteit toon gemiddelde Selfgerigte-leer gedrag. Tematiese analise van die kwalitatiewe data het getoon dat die fakulteit se persepsie van Selfgerigte-leer is die van: essensieël, self-motivering by studente, en ‘n gedeelde vennootskap met die dosente tydens die aanleer van kennis. Fakulteitslede het hul kommer uitgespreek oor die miskonsepsie wat bestaan oor wat Selfgerigte-leer vir studente behels. Hulle is verder van mening dat studente se Selfgerigte-leer gedrag laag is. Fakulteitslede was egter bereid om ‘n aangepaste vorm van Selfgerigte-leer in die kurrikulum te implimenteer.

Samevatting

Hierdie studie toon dat die basiese Selfgerigte-leer vaardighede van studente aan die Universiteit van Uyo is laag tot gemiddeld. Die fakulteit is bereid om Selfgerigte-leer in die kurrikulum te implimenteer, maar verwag dat dit op so ‘n wyse gestruktureer sal word dat dit studente sal motiveer om persoonlik insiatief te neem ten opsigte van Selfgerigte-leer, maar dat dit nie daartoe sal aanleiding gee dat studente hulself sal onderrig in die gesondheidswetenskappe nie.

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